



# Annotated Checklist of Vascular Flora

## *Canyonlands National Park*

Natural Resource Technical Report NPS/NCPN/NRTR—2009/221



**ON THE COVER**

View of the Colorado River and White Rim from Island in the Sky, Canyonlands National Park, Utah. Photograph by Walter Fertig.

---

# **Annotated Checklist of Vascular Flora**

## ***Canyonlands National Park***

Natural Resource Technical Report NPS/NCPN/NRTR—2009/221

### **Authors**

Walter Fertig  
Moenave Botanical Consulting  
1117 W. Grand Canyon Dr.  
Kanab, UT 84741

Sarah Topp  
Northern Colorado Plateau Network  
National Park Service  
P.O. Box 848  
Moab, UT 84532

Mary Moran  
Southeast Utah Group  
National Park Service  
P.O. Box 907  
Moab, UT 84532

### **Editing and Design**

Alice Wondrak Biel  
Northern Colorado Plateau Network  
National Park Service  
P.O. Box 848  
Moab, UT 84532

June 2009

U.S. Department of the Interior  
National Park Service  
Natural Resource Program Center  
Fort Collins, Colorado

The National Park Service, Natural Resource Program Center publishes a range of reports that address natural resource topics of interest and applicability to a broad audience in the National Park Service and others in natural resource management, including scientists, conservation and environmental constituencies, and the public.

The Natural Resource Technical Report Series is used to disseminate results of scientific studies in the physical, biological, and social sciences for both the advancement of science and the achievement of the National Park Service mission. The series provides contributors with a forum for displaying comprehensive data that are often deleted from journals because of page limitations.

All manuscripts in the series receive the appropriate level of peer review to ensure that the information is scientifically credible, technically accurate, appropriately written for the intended audience, and designed and published in a professional manner. This report received informal peer review by subject-matter experts who were not directly involved in the collection, analysis, or reporting of the data.

Views, statements, findings, conclusions, recommendations, and data in this report are those of the author(s) and do not necessarily reflect views and policies of the National Park Service, U.S. Department of the Interior. Mention of trade names or commercial products does not constitute endorsement or recommendation for use by the National Park Service.

This report is available from the Northern Colorado Plateau Network website, <http://www.nature.nps.gov/im/units/NCPN>, as well as at the Natural Resource Publications Management web site, <http://www.nature.nps.gov/publications/NRPM>.

Please cite this publication as:

Fertig, W., S. Topp, and M. Moran. 2009. Annotated checklist of vascular flora: Canyonlands National Park. Natural Resource Technical Report NPS/NCPN/NRTR—2009/221. National Park Service, Fort Collins, Colorado.

# Contents

Figures .....	v
Tables .....	v
Abstract .....	vii
Acknowledgements .....	ix
1 Introduction .....	1
1.1 Background and justification.....	1
1.2 Objectives.....	1
1.3 Study area .....	1
1.3.1 History and setting.....	1
1.3.2 Geology .....	2
1.3.3 Vegetation.....	2
1.3.4 Previous botanical studies .....	4
2 Methods.....	7
3 Results.....	9
3.1 Summary of the flora of Canyonlands National Park .....	9
3.2 Life form and biogeographic diversity.....	10
3.3 Plants of special concern .....	10
3.4 Non-native species and noxious weeds.....	11
4 Discussion .....	15
5 Literature Cited .....	17
Appendices .....	21
Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes. ....	23
Appendix B. Potential (unconfirmed) taxa of Canyonlands National Park .....	82
Appendix C. Rejected (falsely reported or questionable) taxa of Canyonlands National Park....	90
Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes.....	100



# Figures

Figure 1.3.1. Location of Canyonlands National Park, Grand, Garfield, San Juan, and Wayne counties, Utah.....	3
Figure 1.3.4. Increase in the number of plant taxa confirmed as present in Canyonlands National Park, 1960–2007. ....	6

# Tables

Table 1.3.4. Chronology of plant-collecting efforts in Canyonlands National Park. ....	5
Table 3.1. Statistical summary of the flora of Canyonlands National Park. ....	9
Table 3.3. Plant species of conservation concern from Canyonlands National Park.....	11
Table 3.4. Noxious weed species of Canyonlands National Park. ....	14





# Abstract

In 2005–2006, the National Park Service’s Northern Colorado Plateau Network received funding to develop a revised checklist of the vascular plant flora of Canyonlands National Park. This entailed a thorough review of existing literature, re-examination of specimens from the Canyonlands National Park herbarium and other state and national museum collections, and additional field work to corroborate unverified species reports or locate new species. Based on this study, 594 vascular plant taxa have been confirmed or reliably reported as occurring in the park (534 are known from validated herbarium specimens and 60 from unvouchered literature reports). Another 100 species formerly considered part of the park flora have now been shown to be falsely reported. The current flora of Canyonlands National Park represents 16.5% of the known flora of Utah, and 35.1% of the flora of the Colorado Plateau ecoregion within Utah. At least 45 of these species are either listed as sensitive by various agencies or considered species of concern by the state natural heritage program. Introduced plants make up 11.4% of the park flora (68 species), of which only seven species are considered noxious weeds by the State of Utah. Further surveys in Canyonlands National Park are likely to find additional new species (at least 161 are known from similar habitats outside the park boundary), especially among late-flowering, weedy, or wetland taxa.



# Acknowledgements

We would like to thank the following individuals for their assistance with this project: Dr. Angela Evenden, botanist and former leader of the Northern Colorado Plateau Network (NCPN) program in Moab, Utah, was an active proponent of this project and helped secure funding for field work and herbarium studies in 2006. Vicki Webster, curator of museum collections for the National Park Service Southeast Utah Group (SEUG) provided access to all mounted and unmounted herbarium specimens from Canyonlands National Park (CANY), as well as work space within the museum vaults. Melissa Powell, formerly of the NCPN, recorded specimen-label data from all mounted collections in the CANY herbarium. Charlie Schelz, biologist with SEUG, provided research permits for work in 2005–2006 and shared his unmounted plant collections. Libby Nance, former database specialist with the NCPN, assisted with development and quality control of the park's NPSpecies database. Libby Nance, Janet Coles, and Helen Thomas also provided data from recent vegetation mapping and wetland inventories on the park. Drs. Stanley Welsh and Duane Atwood provided access to herbarium collections at Brigham Young University. Dr. Michael Piep provided access to collections at the Utah State University (Intermountain) herbarium. Dr. Ron Hartman and Ernie Nelson provided access and specimen loans from the Rocky Mountain Herbarium at the University of Wyoming. Dr. John Anderson, of the Bureau of Land Management's Arizona office, shared information from his 1983 rare plant field work. Dr. Leila Shultz, of Utah State University, helped locate specimens and data from Loope's 1977 dissertation. Thanks to the technical reviewers (Dr. Angela Evenden, Dr. Dusty Perkins, and Libby Nance) for their comments and suggestions. To any others whom we may have inadvertently forgotten, please accept our apologies (and thanks).

Research was conducted under permit #CANY-2006-SCI-0012 for study number CANY-00084. Funding was provided by the National Park Service through the University of Wyoming.



# 1 Introduction

In 2006, the National Park Service (NPS) established a cooperative agreement with the University of Wyoming, through the Rocky Mountains Cooperative Ecosystem Studies Unit, to produce a series of technical reports summarizing the vascular plant flora of each of the 16 national park units of the Northern Colorado Plateau Network (NCPN). These reports are based on existing information in the park service's NPSpecies database system and augmented by further data mining, reviews of state and regional herbaria, and new field surveys to resolve the status of many reported and unconfirmed species. The objective of these reports is to summarize the current state of knowledge of the flora of each park for the benefit of NPS biologists and interpretive staff, outside researchers, and the general public. The following report addresses the vascular flora of Canyonlands National Park, in southeastern Utah. Other NCPN park units are addressed in separate reports.

## 1.1 Background and justification

One of the primary missions of the NPS is "to conserve unimpaired the natural and cultural resources and values of the national park system for the enjoyment of this and future generations" (NPS 2000). Due to their high degree of protection and distribution across a wide variety of habitat types, the nation's national park units make a significant contribution to the protection of biological diversity (Noss and Cooperrider 1994). Unfortunately, the full contribution of the National Park System is not known, as many park units have traditionally lacked comprehensive biological inventories or monitoring programs to identify the composition and condition of their biota. Knowing the status of park flora and fauna is critical for effective park management and for systematically identifying and filling gaps in the nation's protected area network (Margules and Pressey 2000).

To rectify this shortcoming, Congress passed the National Parks Omnibus Management Act in 1998, to provide guidance and funding for an inventory and monitoring program across the entire National Park System. Since 2000, the NCPN Inventory and Monitoring Program has been developing and verifying species lists of

vertebrates and vascular plants for each park unit in the network (Evenden et al. 2002). This effort has entailed reviewing existing species checklists, corroborating the identification of specimens in park museum and herbarium collections, locating additional specimen records from other museums, mining relevant literature and datasets, and conducting field surveys to locate new taxa or confirm unsubstantiated reports.<sup>1</sup> All of these data have been synthesized in NPSpecies, the park service's standardized database for documenting park status (present, probably present, unconfirmed, falsely reported), abundance, residency, nativity, and rarity. With the production of a technical series of reports on the flora of each park, the NPSpecies data will now be available to a broader audience.

## 1.2 Objectives

The objectives of this project were to:

1. Document the current status (present, reported, potential, or falsely reported) of all vascular-plant species that have been cited as occurring in Canyonlands National Park, based on a review of herbarium collections and past literature.
2. Develop an annotated checklist of the flora of Canyonlands National Park, with supplemental information on taxonomic synonyms, distribution, within-park abundance, flowering period, growth form, nativity, habitat, and sources for each record.

## 1.3 Study area

### 1.3.1 History and setting

Although hundreds of archeological sites indicate longtime human occupation of the Canyonlands area (especially prior to 1300 A.D.), the arid mesas and rugged canyons at the confluence of the Green and Colorado rivers were some of the last areas in the U.S. to be explored and settled by Europeans. During the Great Depression, U.S. Interior Secretary Harold Ickes proposed setting much of the canyon country of southeastern Utah aside as the Escalante National Monument, to conserve watersheds and draw tourists. Action on this proposal was stalled by World War II and the uranium boom of the 1950s. Discussions resumed in the 1960s, though centered on a smaller

---

<sup>1</sup>Taxa refer to all named species, subspecies, and varieties.

area bordering the Colorado River corridor. Congress and President Lyndon Johnson established Canyonlands National Park (NP) in 1964; its boundaries were expanded in 1971 (Evenden et al. 2002).

Canyonlands National Park is located in northwestern San Juan, southwestern Grand, southeastern Wayne, and northeastern Garfield counties, Utah, and consists of four main subsections (Figure 1.3.1) that total 136,610 hectares (337,570 acres). The Island in the Sky (ISKY) region is located at the north end of the park, in the V-shaped wedge above the confluence of the Colorado and Green rivers. It consists of a steep-sided Wingate and White Rim sandstone plateau, connected to mesas to the north by a slender isthmus called The Neck. The Needles District occupies the southeastern quadrant of the park, on the east bank of the Colorado River, and is characterized by extensive desert grasslands amid stone turrets, fins, toadstools, and arches carved from Cedar Mesa Sandstone. West of the Colorado River is The Maze District, an area of bewildering and intricately carved canyons and gullies of Cedar Mesa Sandstone. The Horseshoe Canyon Unit is an isolated segment of the park located at the head of Horseshoe Canyon (a tributary wash of the Green River); it protects the Great Gallery pictograph site.

Canyonlands NP ranges in elevation from 1,190 meters (3,900 ft) at the bottom of Cataract Canyon to 2,188 meters (7,180 ft) in the Needles (Evenden et al. 2002). Average maximum temperatures range from 64.1 to 68.3° F, and average minimum temperatures from 37.8 to 42.2° F. Annual precipitation averages 219–235 mm (8.6–9.3 in), with peaks in March and August (Evenden et al. 2002; Loope 1977).

### 1.3.2 Geology

Uplifting of the Colorado Plateau in the Pleistocene, and downcutting of the Colorado River, has exposed over 3,000 feet of rock strata and 100 million years of geologic history in Canyonlands NP. The oldest rocks in the park are thick beds of salt and gypsum, of the Paradox Formation, that outcrop along the lowermost reaches of the Colorado River. The Paradox layer was derived from repeated cycles of evaporation of shallow marine waters in a landlocked bay during the Pennsylvanian (Baars 2003). The salt and gypsum beds were later buried by sandy limestones of the Honaker Trail Member of the Hermosa Formation. Dur-

ing the Permian, the Canyonlands area fluctuated between a shallow sea and coastal beaches, mudflats, and dunes. These deposits gave rise to the Cedar Mesa Sandstone, Cutler Formation, and White Rim Limestone (Chronic 1988) that today are widely exposed in the Needles and Maze districts. In the Triassic, the region was a large delta, buried by river- and stream-borne mud, silt, and sand that became the Moenkopi and Chinle formations. These beds are exposed today above the White Rim in the ISKY area. Late in the Triassic and into the Jurassic, the Canyonlands area was enveloped by Sahara-like dune systems (Wingate and Navajo sandstones) interrupted by a period of stream deposition (Kayenta Formation). The Wingate, Kayenta, and Navajo formations form the steep cliffs of the Island in the Sky. Quaternary Aeolian deposits occur on the summit of ISKY, the grassland parks of the Needles, and in the Salt Creek watershed (Baars 2003; Loope 1977).

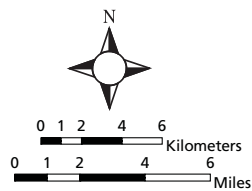
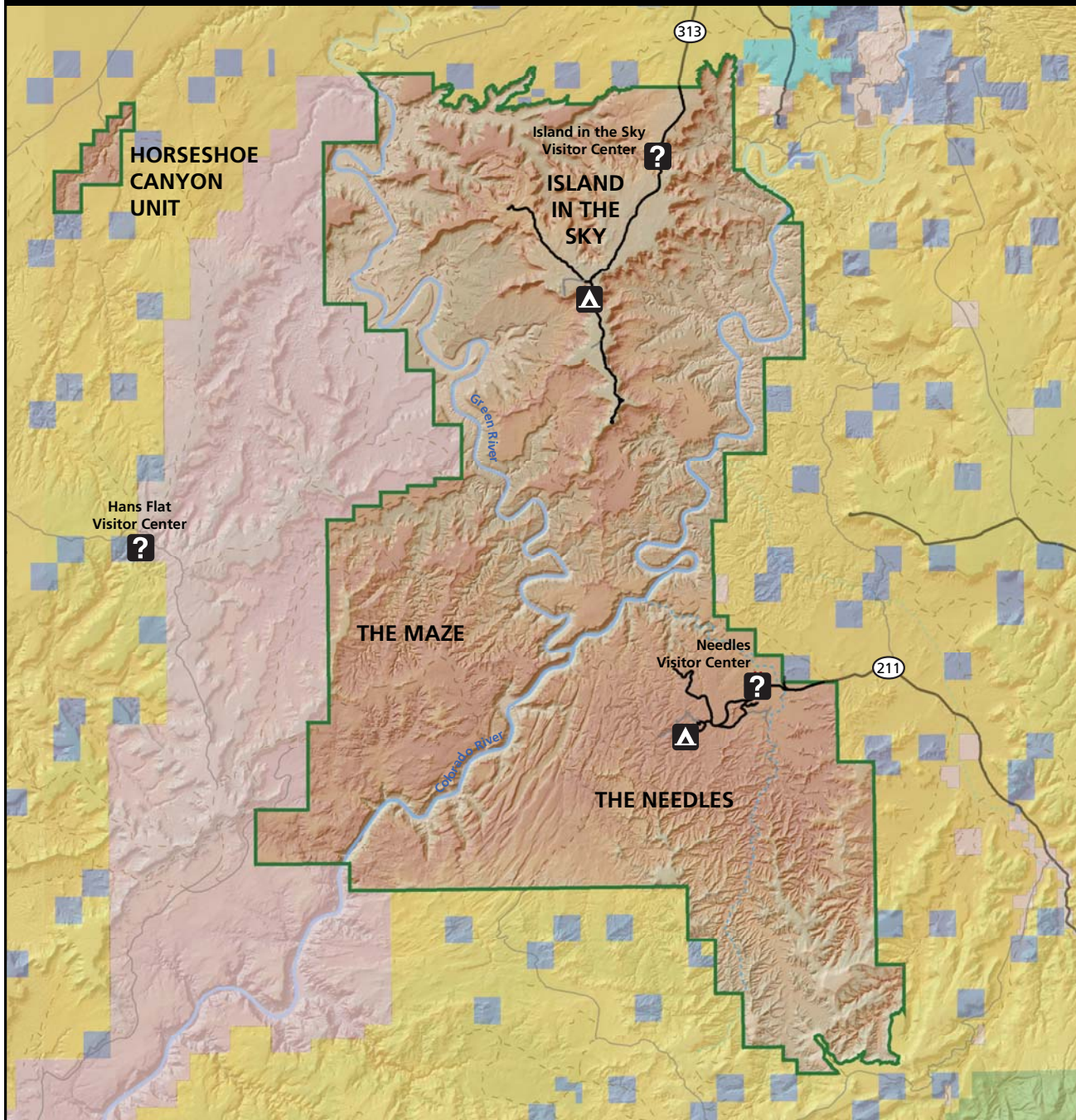
### 1.3.3 Vegetation

Loope (1977) identified six major vegetation types in Canyonlands NP. He found vegetation patterns to be strongly correlated with soil depth-to-bedrock and moisture availability. Areas with thin, lithic soils or exposed sandstone bedrock and cliff rims support dwarf forests of two-needle pinyon (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*), with an understory of dwarf mountain mahogany (*Cercocarpus intricatus*), Utah serviceberry (*Amelanchier utahensis*), cliff-rose (*Purshia mexicana* var. *stansburyana*), and Bigelow's sagebrush (*Artemisia bigelovii*). Pinyon-juniper woodlands are best developed on outcrops of Kayenta, Navajo, Cedar Mesa, and White Rim sandstones or on rocky slopes of washes.

Mesa tops and alluvial benches with soils up to 30 cm deep to bedrock typically support blackbrush (*Coloogyne ramosissima*) communities. Blackbrush is dependent on a subsurface hardpan or bedrock layer to trap soil moisture that would otherwise percolate beyond the root layer. Commonly associated species in blackbrush stands include galleta (*Hilaria jamesii*), shadscale (*Atriplex confertifolia*), and Torrey's ephedra (*Ephedra torreyana*). Park lands with deeper soils (often associated with aeolian deposits over 50 cm thick above bedrock) tend to support desert grasslands dominated by needle-and-thread (*Stipa comata*), Indian ricegrass (*S. hymenoides*), blue grama (*Bouteloua gracilis*), galleta, winterfat (*Krascheninnikovia lanata*), and green ephedra (*Ephedra viridis*). Because of their diffuse root systems,

# Canyonlands National Park

Utah



Established September 12, 1964  
 1,189–2,188 m elevation  
 (3,900–7,180 ft elevation)  
 136,610 ha (337,570 ac)



### Legend

- Intermittent streams
- Rivers
- Paved roads
- Unpaved roads
- Unimproved/4WD roads
- Park boundary (NPS)
- Dead Horse Point State Park
- Glen Canyon NRA (NPS)
- Bureau of Land Management
- Private
- State
- U.S. Forest Service

MAP CREATED BY ANETH WIGHT, NCPN (DERIVED FROM EVENDEN ET AL. 2002)

Figure 1.3.1. Location of Canyonlands National Park, Grand, Garfield, San Juan, and Wayne counties, Utah.

grass species are better adapted to exploit water that passes rapidly through deep, sandy soils. Desert grasslands in much of the Needles region were grazed more intensively than remote and arid portions of the Maze and ISKY areas and, consequently, have less biological soil crust and lower vascular-plant species richness (Kleiner and Harper 1972).

Basin big sagebrush (*Artemisia tridentata* var. *tridentata*) communities are relatively infrequent within Canyonlands NP, and occur mostly on alluvial benches and toeslopes with moderately deep soils and a high water table (Loope 1977). Most stands in the park occur along benches bordering the Green and Colorado rivers, and in alluvial bottomlands in Salt Creek and Lavender and Davis canyons. Frequently associated species include fourwing saltbush (*Atriplex canescens*), greasewood (*Sarcobatus vermiculatus*), rubber rabbitbrush (*Chrysothamnus nauseosus*), and Gambel's oak (*Quercus gambelii*).

Salt desert scrub vegetation predominates on low benches with clayey soils. These stands typically consist of Garrett's saltbush (*Atriplex garrettii*) and shadscale with budsage (*Artemisia spinescens*), Torrey's ephedra, desert trumpet (*Eriogonum inflatum*), and Hopi blanketflower (*Gaillardia pinnatifida*) and are often associated with outcrops of the Chinle, Moenkopi, or Cutler formations (Loope 1977).

Riparian communities occur along perennial watercourses and in hanging gardens within shady alcoves or cliffs. Coyote willow (*Salix exigua* var. *stenophylla*) and five-stamen tamarisk (*Tamarix chinensis*) form a narrow strip of dense vegetation bordering much of the Colorado and Green rivers. These stands are interspersed by wetlands of cattails (*Typha domingensis* or *T. latifolia*) or common reed (*Phragmites australis*). Moist terraces located slightly upslope of the active river channel support scattered Fremont cottonwood (*Populus fremontii*), desert olive (*Forestiera pubescens*), and Goodding's black willow (*Salix gooddingii*). Hanging gardens occur infrequently in shady and permanently wet sandstone seeps, and support water birch (*Betula occidentalis*), golden sedge (*Carex aurea*), alcove columbine (*Aquilegia micrantha*), cave primrose (*Primula specuicola*), alcove death-camas (*Zigadenus vaginatus*), Eastwood's monkey-flower (*Mimulus eastwoodiae*), and southern maidenhair fern (*Adiantum capillus-veneris*).

Perhaps the rarest vegetation type documented within Canyonlands NP consists of small patches of Douglas-fir (*Pseudotsuga menziesii*) and Rocky Mountain maple (*Acer glabrum*) on cool, shaded, north-facing canyon slopes or alcoves (Welsh 1970).

#### 1.3.4 Previous botanical studies

The Canyonlands area was essentially unexplored botanically until Stanley Welsh, Glen Moore, and their colleagues from Brigham Young University (BYU) initiated baseline floristic studies in 1964–1965. In two separate publications, Welsh and Moore (1965) documented 234 taxa from the Needles District, and Moore and Welsh (1965) reported 92 species from the Island in the Sky area. Taking into account changes in species concepts, misidentifications, and unvouchered reports, the flora of Canyonlands NP stood at 212 taxa in 1966 (Table 1.3.4). In 1967, Edgar Kleiner and Kimball Harper, of the University of Utah, documented at least 13 new vascular-plant species as part of their research on grazing effects on desert grassland vegetation of Chesler and Virginia parks, in the Needles area (Kleiner and Harper 1972). Including additional surveys by Welsh, Moore, and N. Duane Atwood (of BYU), the park flora reached 239 taxa at the end of the 1960s (Figure 1.3.4).

Walter Loope, a graduate student from Utah State University, conducted a thorough vegetation study of Canyonlands NP from 1972 to 1974. Loope (1977) discovered at least six new species for the park, and reported four others while compiling a checklist of 298 species. Over the remainder of the 1970s, Peg Johnson, David Johnson, and Diane Allen added 48 additional species while helping to develop the park's herbarium collections (Table 1.3.4).

During the 1980s, floristic, rare-plant, and vegetation monitoring studies added nearly 150 species to the documented flora of Canyonlands NP (Figure 1.3.4). Anderson (1983) conducted a rare plant study in the Needles area and discovered nine new species for the park flora. Stan Welsh, Matthew Chatterley, and Larry Higgins, who conducted surveys along the Colorado River and in the ISKY area, contributed 42 new species to the Canyonlands NP flora. Jayne Belnap and Tim Graham, of the NPS and U.S. Geological Survey (USGS), added at least 60 new species in the course of establishing a network of permanent monitoring transects throughout the park. Other



NPS naturalists, rangers, and seasonal employees collected at least 35 new species for the park during the decade (Table 1.3.4).

From 1989 to 1991, Ken Heil and colleagues from San Juan College, in New Mexico, surveyed national parks of the Colorado Plateau and discovered 27 new species for Canyonlands NP. Fowler and others (2007) added two new wetland species during a floristic inventory of hanging gardens of

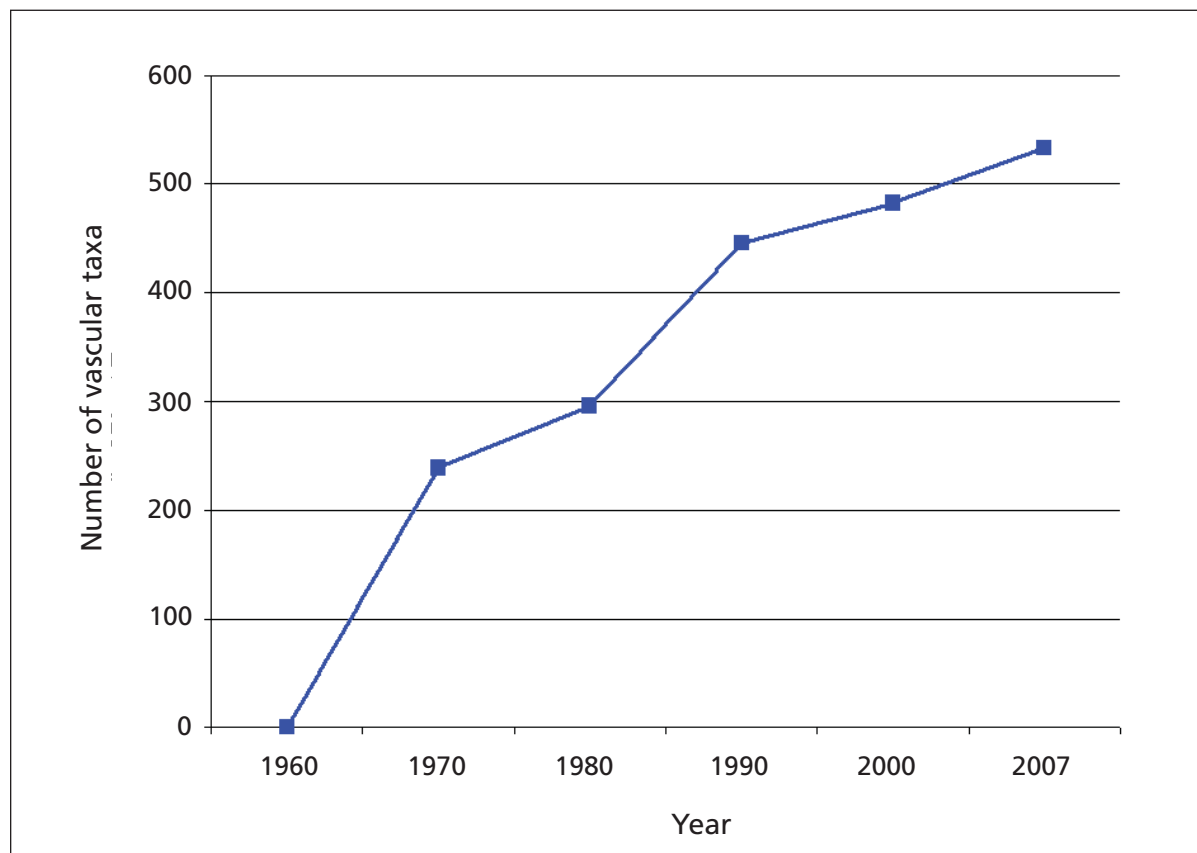
the Colorado Plateau. Beginning in 1996, NPS Southeast Utah Group (SEUG) biologist Charlie Schelz collected at least 24 new species and cited 46 others without vouchers in annual park checklists (Schelz et al. 2006). Since 2003, 50 new species have been confirmed or reported for the park flora through vegetation mapping studies (NCPN in ed.), weed inventories (Dewey and Anderson 2005), and in the course of preparing this document (Table 1.3.4, Figure 1.3.4).

**Table 1.3.4. Chronology of plant-collecting efforts in Canyonlands National Park.**

Year	Collector(s)	# of new taxa	Comments
1964	S. L. Welsh, G. Moore, S. G. Canter, and M. Olsen	202	Stan Welsh, Glen Moore, and colleagues from Brigham Young University (BYU) conducted a baseline floristic study of Canyonlands NP and documented 202 species for the park. Among the more noteworthy collections was the type of Fisher milkvetch ( <i>Astragalus piscator</i> ) from Salt Canyon (Welsh 1982).
1965–1966	S. L. Welsh, G. Moore, and D. Wiens	10	Welsh and Moore (1965) published a checklist of the flora of the Needles area of Canyonlands NP, citing 234 taxa. Moore and Welsh (1965) published a comparable list for the Island in the Sky (ISKY) region, with 92 taxa. Based on later corrections and excluding unvouchered taxa, the total park flora, through 1966, stood at 212 species.
1967	E. G. Kleiner and K. T. Harper	13	Edgar Kleiner and Kimball Harper, of the University of Utah, added at least 13 new species to the Canyonlands NP flora through their field work describing grassland communities in Chesler and Virginia parks (Kleiner and Harper 1972).
1968–1970	S. L. Welsh, G. Moore, and N. D. Atwood	17	Welsh and colleagues from BYU added 14 species from 1968 to 1969, and 3 more in 1970.
1972–1973	W. Loope	6 (+ 4 reported)	Walter Loope, of Utah State University, sampled 157 vegetation plots throughout the park and compiled a checklist of 298 species as part of his doctoral dissertation (Loope 1977).
1977–1979	P. Johnson, D. Johnson, and D. Allen	48	Peg Johnson, David Johnson, and Diane Allen made nearly 200 collections over a three-year period for the CANY herbarium and documented 48 new species for the park.
1981–1982	K. Kitchell and D. Fagan	3	Kathy Kitchell and Damian Fagan collected 14 specimens for the CANY herbarium, including first collections of 3 taxa.
1983	J. Anderson, S. L. Welsh, M. Chatterly, L. Higgins, and A. DeBolt	55 (+ 2 reported)	U.S. Fish and Wildlife Service botanist John Anderson conducted a rare plant survey in the Needles Section of Canyonlands NP to assess potential impacts of a proposed nuclear waste facility and, in the process, discovered 9 new species. Ann DeBolt collected more than 30 specimens for the CANY herbarium, including 6 new taxa for the park. Stan Welsh and colleagues made more than 60 collections along the Colorado River and in the ISKY area, and added 42 new species to the park flora.
1984–1986	A. DeBolt, N. Boschen, J. Chrobak	23	Ann DeBolt, Nelson Boschen, and Judie Chrobak collected 45 specimens for the CANY herbarium and added 23 new species to the park flora. Boschen (1985) compiled a checklist for Canyonlands NP, with 429 species.
1987–1988	J. Belnap, T. Graham, K. Thorne, L. Thomas, T. Inskip, and J. Chrobak-Cox	65	Jayne Belnap and Tim Graham expanded on the monitoring studies initiated by Kleiner and Harper and added 60 new species to the park flora. Kaye Thorne and colleagues added 3 new species, and Judie Chrobak-Cox collected 2 new taxa.

**Table 1.3.4. Chronology of plant-collecting efforts in Canyonlands National Park, cont.**

Year	Collector(s)	# of new taxa	Comments
1989–1991	K. Heil, R. Fleming, and J. M. Porter	24 (+ 3 reported)	Ken Heil, Rich Fleming, J. Mark Porter, and associates from San Juan College collected more than 150 specimens for the CANY herbarium and documented 24 new species for Canyonlands NP as part of a multi-year rare plant and floristic inventory of Colorado Plateau national parks.
1993	J. Fowler and C. May	2	Jim Fowler and C. May discovered 2 new species during their comprehensive inventory of hanging-garden communities in the Colorado Plateau (Fowler et al. 2007).
1996–2002	C. Schelz and M. Miller	21 (+46 reported)	Charlie Schelz, biologist with the Southeast Utah Group, added at least 20 new species for the park flora, and Mark Miller documented 1 additional species. Schelz and others (2006) compiled annual checklists of the park flora and cited at least 46 additional species that have not been vouchered within Canyonlands NP.
2003–2004	K. Andersen, S. Dewey, C. Schelz, S. Topp, L. Hahn, and L. Ballenger	23 (+ 5 reported)	Dewey and Andersen (2005) documented one new weed species and reported four others during their two-year inventory of exotic and noxious plants of the park. Sarah Topp, Lisa Hahn, and Liz Ballenger added 18 new species and 1 additional species report while conducting vegetation mapping field work (NCPN in ed.). Charlie Schelz also documented 4 new species.
2005	G. Rink	4	Glen Rink made 19 collections for the CANY herbarium and added 4 new species to the park during a late-fall float trip down the Colorado River.
2006–2007	W. Fertig, M. Moran, S. Topp, R. Mann, and J. Castello	18	Walter Fertig added 9 new species in 2006, and Mary Moran, Sarah Topp, Becky Mann, and Joe Castello, of the NPS and the U.S. Geological Survey, collected 9 additional species in 2007.



**Figure 1.3.4. Increase in the number of plant taxa confirmed as present in Canyonlands National Park, 1960–2007.**

## 2 Methods

In July 2005, we reviewed all mounted specimens in the Canyonlands National Park herbarium (CANY), housed in the SEUG office in Moab, Utah, to determine whether each was correctly identified to species, subspecies, or variety following the nomenclature of Welsh and others (2003). As necessary, we made corrections and annotations to each specimen and to the voucher records in the park's Automated National Cataloging System (ANCS+) and NPSpecies database.

Based on this herbarium work and a review of park references (Anderson 1983; Moore and Welsh 1965; Kleiner and Harper 1972; Loope 1977; Schelz et al. 2006; Springer et al. 2006; Welsh and Moore 1965), we developed four lists:

1. A revised checklist of species that were present in the park (confirmed by an authenticated voucher; included in Appendices A and D);
2. A list of species that were reported in the literature but not corroborated with a voucher (equivalent to "probably present" in NPSpecies terminology; included in Appendices A and D);
3. A list of potential species ("unconfirmed" in NPSpecies) known from the vicinity of Canyonlands National Park using an unpublished list generated by Dr. N. Duane Atwood of Brigham Young University and Albee and others (1988) (included in Appendix B); and
4. A list of species that are now known to be misidentified or highly questionable (Appendix C).

Each list was annotated with supplemental information on life form, geographic range (within the context of Utah), population size in the park (derived from Loope 1977; NCPN in ed.; and field observations), flowering period, distribution across general vegetation types, nativity, data source (collector and collection number from a sample specimen or literature citation), year of earliest collection (from herbarium records), and relevant synonymy and taxonomic problems (based on review of Barkworth et al. 2003, 2007; Barneby 1989; Cronquist 1994; Cronquist et al. 1972, 1977, 1984, 1997; Dorn 2001; Flora of

North America Editorial Committee 1993, 1997, 2000, 2002a, 2002b, 2003, 2005, 2006a, 2006b, 2006c; Holmgren et al. 2005; and Weber and Wittmann 2001). The annotations to these lists and label data from the CANY herbarium review were then incorporated into the NPSpecies database for the park.

Work in 2006–2007 focused on confirmation of reported and potential species for the park flora through field surveys and review of collections from state and regional herbaria. We made collecting trips to Canyonlands NP in summer and fall 2006, and summer 2007, to target missing species, emphasizing undersampled wetland, weedy, and late-flowering taxa. Herbarium studies were undertaken at Brigham Young University (BRY), Utah State University (USU), and the University of Wyoming (RM) in March, June, and October 2006 and February and March 2007. We also documented park specimens from the Virtual Herbarium website of the New York Botanical Garden (<http://sciweb.nybg.org/science2/hcol/intf/index.asp>). Finally, we found additional new species reports by examining unmounted collections by SEUG and NCPN researchers and reviewing plot data from recent vegetation mapping, weed, and wetland inventories (Dewey and Andersen 2005; Fowler et al. 2007; NCPN in ed.; Springer et al. 2006).



# 3 Results

## 3.1 Summary of the flora of Canyonlands National Park

Of the 1,199 vascular plant vouchers in the CANY herbarium that we examined in 2005 (excluding 363 specimens on loan), 65 were misidentified (5.4%), 62 were revised to a more current name (5.2%), 115 had variety or subspecies names added (9.6%), and 957 were found to be correctly determined (79.8%). Based solely on these collections, the confirmed flora of Canyonlands National Park stood at 451 taxa (Fertig 2006). From 2005 to 2007, we located an additional 60 taxa from collections at Brigham Young University (mostly species reported in Welsh and Moore [1965] and Moore and Welsh [1965], but without

a duplicate voucher deposited in the CANY herbarium), Utah State University, and the University of Wyoming’s Rocky Mountain Herbarium. Field surveys in 2004–2007 netted another 23 new species: 10 from NPS and USGS biologists Mary Moran, Sarah Topp, Becky Mann, and Joe Castello, 4 from Glenn Rink, and 9 from the field collections of Walter Fertig. Overall, the documented flora of Canyonlands NP has increased by 83 species (15.5%), bringing the total number of taxa to 534 (Table 3.1, Appendices A, D).

Currently, 60 additional taxa have been reported for Canyonlands NP but have yet to be corroborated with a voucher specimen (Table 3.1, Appendix A). Of these, 49 were reported by Schelz and others (2006) (including three species from Heil, Fleming, and Porter, with vouchers at San Juan College, that were not examined for this

**Table 3.1. Statistical summary of the flora of Canyonlands National Park.**

Category	Number confirmed in park	Number additionally reported for park	Total
<b>Taxonomic diversity</b>			
Total taxa (including varieties and subspecies)	534	60	594
Full species (excluding varieties and subspecies)	510	55	565
Families	70	2	72
<b>Life form diversity</b>			
Tree taxa	15	5	20
Shrub taxa	85	8	93
Perennial forb taxa	238	27	265
Annual forb taxa	99	9	108
Perennial graminoid taxa	72	10	82
Annual graminoid taxa	17	1	18
Fern taxa	8	0	8
<b>Biogeographic diversity</b>			
Introduced taxa	50	18	68
Native taxa			
Locally endemic taxa	15	1	16
Regionally endemic taxa	83	8	91
Disjunct taxa	0	0	0
Peripheral taxa	11	4	15
Sparse taxa	4	3	7
Widespread taxa	371	26	397
<i>Total native taxa</i>	<i>484</i>	<i>42</i>	<i>526</i>

The number of taxa and families is based on taxonomic concepts of Welsh and others (2003). See appendices for an explanation of the various categories.

study). The remainder were reported by Anderson (1983), Dewey and Andersen (2005), Loope (1977), and the NCPN (in ed.). Taken together, the number of confirmed and reported vascular plant taxa in Canyonlands NP stands at 594 taxa (Table 3.1, Appendix A).

Entering the 2006 field season, we recognized 368 taxa as potentially occurring in Canyonlands NP, based on the proximity of the park to known populations (Albee et al. 1988; Fertig 2006). At least 45 of these species were found to occur in the park based on field collections or relocated herbarium specimens in 2006. Another 162 species were eliminated from the potential list based on their low probability of occurring in the park. Most of these were species of montane coniferous forest or wetland habitats in the Abajo or La Sal ranges. The current number of potential species that we are recognizing for Canyonlands National Park is 161 (Appendix B).

Of the original pool of species documented or reported for Canyonlands NP, we found that 56 taxa were falsely reported based on misidentified voucher specimens in the CANY and BRY herbaria or literature reports based on collections made outside of the park. We consider an additional 44 species cited (but not vouchered) by Schelz and others (2006) and the NCPN vegetation mapping team (NCPN in ed.) to be questionable based on the absence of suitable habitat or the distance of Canyonlands NP to the known or expected range of each species (Appendix C).

The confirmed and reported flora of Canyonlands National Park represents 16.5% of the 3,594 native and naturalized taxa documented for the state of Utah by Welsh and others (2003) and 47.7% of the state's 151 plant families (Table 3.1). Within Garfield, Grand, San Juan, and Wayne counties, the park flora captures 29.8% of the 1994 taxa reported by Welsh and others (2003). At the ecoregional scale, Canyonlands NP contains 35.1% of the 1,694 species reported for the Utah portion of the Colorado Plateau (Shultz et al. 2006).

### 3.2 Life form and biogeographic diversity

Although ecologically dominant, tree and shrub species make up only 19% of the confirmed and reported plant taxa of Canyonlands NP (Table 3.1). Perennial forbs are the most species-rich life form in the park flora, with 265 known and reported taxa (44.6% of the total flora). Annual

forbs and grass-like plants comprise over 21% of the flora. Like trees and shrubs, perennial graminoids are ecologically important but relatively species-poor, representing about 14% of the total flora. The diversity of ferns and fern-allies in Canyonlands NP is especially low (1.3%) (Table 3.1).

Of the park's 526 native taxa, 397 (75.5%) are widespread across Utah and western North America. Only 16 species (3% of the park's total native flora) have extremely limited global distributions (local endemics found within an area of less than 1° of latitude × 2° of longitude; see appendices for complete definitions of biogeographic categories). Regional endemics (largely restricted to the Colorado Plateau) comprise an additional 17.3% of the native flora of the park (Table 3.1). Another 22 taxa (4.2%) are sparsely distributed across the state or occur in the Canyonlands NP area at the periphery of their continuous range.

### 3.3 Plants of special concern

Canyonlands National Park apparently has no plants listed as threatened or endangered under the U.S. Endangered Species Act, though one threatened species, Navajo sedge (*Carex specuicola*), has recently been reported from two wetland sites in the Needles and Maze districts (Welsh et al. #2998 and Heil et al. #5916, both at CANY). Both collections were initially identified as other sedge species but were annotated as *C. specuicola* by Sherel Goodrich, author of the Cyperaceae treatment of *A Utah Flora, third edition*. Goodrich now believes that all Utah material previously ascribed to *C. specuicola* belongs to a more common species, Parry's sedge (*C. parryana*) (Welsh et al. 2003). Critical *C. specuicola* material from Canyonlands NP and southeast Utah should be evaluated by an independent sedge expert to confirm their identity.

At least six park taxa were formerly candidates for potential listing (Category 2 or 3C) under the act (Table 3.3) (UDWR 1998). Schelz and Moran (2007) cited 18 species known or suspected to occur in Canyonlands NP as NPS species of concern. Two of these species are now considered falsely reported for the park: Johnson's cryptanth (*Cryptantha johnstonii*) and Beck's spring-parsley (*Cymopterus beckii*), Appendix C) due to misidentifications. Five others on the SEUG list are not presently known from Canyonlands NP, but are on the potential species list (Appendix B): Utah bladder fern (*Cystopteris utahensis*), Canyonlands lomatium (*Lomatium latilobum*), Entrada rush-

pink (*Lygodesmia grandiflora* var. *entrada*), Trotter's spring-parsley (*Oreoxis trotteri*), and alcove rock-daisy (*Perityle specuicola*). Isely's milkvetch (*Astragalus iselyi*), Cisco milkvetch (*A. sabulosus*), and Abajo penstemon (*Penstemon lentus* var. *albiflorus*) are listed as questionable for Canyonlands NP by Schelz and Moran (2007), but are not known or expected to occur in the park due to an absence of likely habitat.

The Utah Division of Wildlife Resources Conservation Data Center (UTCDC) tracks 51 species from Canyonlands NP (Table 3.3) as species of concern based on global and statewide rarity (UDWR 1998). Although not currently cited on any agency list, three recently described narrow endemics of Canyonlands NP and the Colorado River drainage may warrant attention as species of concern due to their apparently limited range (Welsh et al. 2003): San Rafael prickly-poppy (*Argemone corymbosa* var. *parva*), Atwood's mule-

fat (*Baccharis viminea* var. *atwoodii*), and canyon spindly goldenbush (*Haplopappus scopulorum* var. *canonis*).

### 3.4 Non-native species and noxious weeds

Introduced plant species (not historically native to Utah or North America) make up 11.4% of the confirmed and reported flora of Canyonlands NP (Table 3.1). This figure is lower than the statewide average of 13.5% non-native species (Fertig 2007; Welsh et al. 2003). Of the 68 introduced plant species confirmed or reported for Canyonlands NP, seven are listed as noxious by the State of Utah (SUDAF 2008) (Table 3.4). Dewey and Andersen (2005) mapped the distribution of selected noxious and non-native weeds within the park in 2003–2004, and found all but five-stamen tamarisk to occur in small and localized areas.

**Table 3.3. Plant species of conservation concern from Canyonlands National Park.**

Family	Species	Common name	TNC global rank	Legal status	UTCDC status
Agavaceae	<i>Yucca toftiae</i>	Toft's yucca	G5T3	USFWS: former 3C	Watch, S2S3
Asclepiadaceae	<i>Asclepias rusbyi</i>	Rusby's milkweed	G4?		Add. Data, S1
Asclepiadaceae	<i>Sarcostemma cynanchoides</i> var. <i>hartwegii</i>	climbing milkweed	G5T5		Peripheral, S2?
Berberidaceae	<i>Berberis fendleri</i>	Fendler's barberry	G5		Add. Data, S2
Betulaceae	<i>Ostrya knowltonii</i>	western hop-hornbeam	G3G4		Watch, S2
Cactaceae	<i>Echinocereus engelmannii</i> var. <i>variegatus</i> *	Glen Canyon hedgehog cactus	G5T3?		Watch, S1S2
Cactaceae	<i>Opuntia basilaris</i> var. <i>basilaris</i> *	beavertail cactus	G5T5		Peripheral, S2
Cactaceae	<i>Opuntia phaeacantha</i> var. <i>major</i>	large pricklypear	G5T5		Peripheral, S2S3
Chenopodiaceae	<i>Krascheninnikovia lanata</i> var. <i>ruinina</i>	Ruin Park winterfat	G5 T1?Q		Rare, S1?
Compositae (Asteraceae)	<i>Aster spinosus</i>	Mexican devilweed	G4G5		Peripheral, S1
Compositae (Asteraceae)	<i>Baccharis viminea</i> var. <i>atwoodii</i>	Atwood's mule-fat	G5? TNR		
Compositae (Asteraceae)	<i>Cirsium neomexicanum</i> var. <i>utahense</i>	Utah thistle	G5T?Q		Add. Data, S3?
Compositae (Asteraceae)	<i>Cirsium rothrockii</i>	Rothrock's thistle	G3?		Add. Data, S1

**Table 3.3. Plant species of conservation concern from Canyonlands National Park, cont.**

Family	Species	Common name	TNC global rank	Legal status	UTCDC status
Compositae (Asteraceae)	<i>Cirsium rydbergii</i>	Rydberg's thistle	G3	USFWS: former 3C, SEUG Species of Concern	Watch, S2S3
Compositae (Asteraceae)	<i>Grindelia fastigiata</i>	erect gumweed	G3		Watch, S2
Compositae (Asteraceae)	<i>Haplopappus scopulorum</i> var. <i>canonis</i>	canyon spindly goldenbush	G4TNR		
Compositae (Asteraceae)	<i>Pluchea sericea</i>	arrowweed	G4G5		Peripheral, S3
Compositae (Asteraceae)	<i>Syntrichopappus fremontii</i>	Fremont's syntrichopappus	G5		Peripheral, S2?
Compositae (Asteraceae)	<i>Thelesperma megapotamicum</i>	Hopi-tea	G5		Peripheral, S1
Compositae (Asteraceae)	<i>Xylorhiza glabriuscula</i> var. <i>linearifolia</i>	Moab woodyaster	G4T1T2		Rare, S1S2
Cruciferae (Brassicaceae)	<i>Lepidium alyssoides</i> var. <i>eastwoodiae</i>	Eastwood's tall pepperwort	G5? T2T4		Add. Data, SR
Cucurbitaceae	<i>Cucurbita foetidissima</i>	buffalo gourd	G5		Peripheral, S3?
Cyperaceae	<i>Cyperus acuminatus</i>	taper-tip flat-sedge	G5		Peripheral, S1
Gramineae (Poaceae)	<i>Andropogon glomeratus</i> var. <i>scabriglumis</i> *	bushy bluestem	G5		Peripheral, S2
Gramineae (Poaceae)	<i>Bothriochloa laguroides</i> var. <i>torreyana</i> *	silver bluestem	G5TNR		Peripheral, S1
Gramineae (Poaceae)	<i>Spartina pectinata</i> *	prairie cordgrass	G5		Add. Data, S?
Hydrophyllaceae	<i>Phacelia howelliana</i>	Howell's phacelia	G2	SEUG Species of Concern	Watch, S2
Leguminosae (Fabaceae)	<i>Astragalus flexuosus</i> var. <i>flexuosus</i> *	pliant milkvetch	G5T5		Peripheral, S1
Leguminosae (Fabaceae)	<i>Astragalus monumentalis</i>	Monument milkvetch	G4T2T3		Watch, S3?
Leguminosae (Fabaceae)	<i>Astragalus nidularius</i>	bird's-nest milkvetch	G3?		Watch, S3?
Leguminosae (Fabaceae)	<i>Astragalus piscator</i>	Fisher milkvetch	G2G3	SEUG Species of Concern	Rare, S2
Leguminosae (Fabaceae)	<i>Astragalus praelongus</i> var. <i>lonchopus</i> *	longstipe milkvetch	G4T3?		Watch, S1S2
Leguminosae (Fabaceae)	<i>Psoraleidium lanceolatum</i> var. <i>stenophyllum</i>	slenderleaf scurfpea	G5 T3?Q		Tax. Prob., S3?
Leguminosae (Fabaceae)	<i>Psorothamnus thompsoniae</i> var. <i>thompsoniae</i> *	Thompson's indigo-bush	G3?T3?	USFWS: former 3C	Watch, S3?
Leguminosae (Fabaceae)	<i>Sophora nuttalliana</i> *	silky sophora	G5		Peripheral, S1
Liliaceae	<i>Zigadenus vaginatus</i>	alcove death camas	G2	SEUG Species of Concern	Rare, S2



**Table 3.3. Plant species of conservation concern from Canyonlands National Park, cont.**

Family	Species	Common name	TNC global rank	Legal status	UTCDC status
Malvaceae	<i>Sphaeralcea janeae</i>	Jane's globemallow	G1	UT BLM: Sensitive, USFWS: former C2, SEUG Species of Concern	Rare, S1
Malvaceae	<i>Sphaeralcea moorei</i>	Moore's globemallow	G5T2T3Q		Watch, S2S3
Nyctaginaceae	<i>Tripterocalyx carneus</i> var. <i>wootonii</i>	Wooton's sand-verbena	G4G5T2T4		Peripheral, S2?
Orchidaceae	<i>Epipactis gigantea</i>	giant helleborine	G3G4	SEUG Species of Concern	
Orchidaceae	<i>Habenaria zothecina</i> ( <i>Platanthera zothecina</i> )	alcove bog-orchid	G2	UT BLM: Sensitive, USFWS: former C2, SEUG Species of Concern	Rare, S2
Papaveraceae	<i>Argemone corymbosa</i> var. <i>parva</i>	San Rafael prickly poppy	G3G4 TNR		
Polemoniaceae	<i>Gilia imperialis</i> ( <i>G. latifolia</i> var. <i>imperialis</i> )	Cataract gilia	G4T2	UT BLM: Sensitive, SEUG Species of Concern	Rare, S2
Polypodiaceae	<i>Asplenium resiliens</i>	ebony spleenwort	G5		Peripheral, S1
Polypodiaceae	<i>Pellaea glabella</i> var. <i>occidentalis</i>	western cliffbrake	G5T4		Peripheral, S2
Polypodiaceae	<i>Pellaea limitanea</i>	border cloak-fern	G4G5		Peripheral, S1
Primulaceae	<i>Primula specuicola</i>	cave primrose	G4Q	USFWS: former 3C	Watch, S3
Rhamnaceae	<i>Ceanothus greggii</i> var. <i>franklinii</i>	Franklin's desert-lilac	G5T1T2		Rare, S1S2
Rosaceae	<i>Potentilla rivalis</i>	brook cinquefoil	G5		Infrequent, S1S2
Rubiaceae	<i>Galium multiflorum</i> var. <i>coloradoense</i>	Colorado bedstraw	G4		Watch, S3?
Saxifragaceae (Hydrangeaceae)	<i>Fendlera rupicola</i>	fendlerbush	G5		Peripheral, S2S3
Solanaceae	<i>Chamaesaracha coronopus</i>	false nightshade	G5		Peripheral, S1
Solanaceae	<i>Solanum jamesii</i>	James' potato	G3G5		Peripheral, S1
Verbenaceae	<i>Phyla cuneifolia</i>	wedge-leaf fog-fruit	G5		Peripheral, S3?
Zygophyllaceae	<i>Kallstroemia californica</i>	yellow kallstroemia	G5		Add. Data, S1

This list is derived from Schelz and Moran (2007) and the Utah Division of Wildlife Resources (1998) for Utah Conservation Data Center (UTCDC) status. Species are all confirmed as present (with vouchers) unless indicated by an \* (reported).

Codes: **TNC global rank** assesses abundance and conservation priority on a scale of 1–5 (1 being extremely vulnerable and 5 being secure) for full species (G) and varieties or subspecies (T) across their entire range. A “?” indicates uncertainty in the rank, Q = taxonomic questions, U = unknown, and NR = not ranked. A comparable scoring system is used to measure state abundance (S) in Utah under the column UTCDC status. Under **legal status**, USFWS = U.S. Fish and Wildlife Service. C2 = Category 2 candidate (a former category used for taxa that might warrant being proposed for threatened or endangered status following additional research). 3C = Category 3 candidates (species dropped from consideration for listing). USFS = U.S. Forest Service. UT BLM = U.S. Bureau of Land Management, Utah office. **UTCDC status** includes conservation categories adopted by the state natural heritage program to prioritize endemic and rare plant taxa (UDWR 1998). These categories include: Historical (presumed extinct or only known historically through their range), Rare (plants with rangewide viability concerns), Watch (regional endemics without rangewide viability concerns), Peripheral (rare or uncommon in Utah, but more common rangewide), Infrequent (plants occur infrequently over western U.S.), Taxonomic Problems (validity of species, subspecies, or variety has been questioned), Additional Data (species appear rare, but more information needed before being assigned to a different category).

---

**Table 3.4. Noxious weed species of Canyonlands National Park.**

---

<b>Family</b>	<b>Species</b>	<b>Common name</b>	<b>Park status</b>
Compositae (Asteraceae)	<i>Carduus nutans</i>	musk thistle	Reported
Compositae (Asteraceae)	<i>Centaurea diffusa</i>	diffuse knapweed	Present
Compositae (Asteraceae)	<i>Centaurea repens</i>	Russian knapweed	Present
Compositae (Asteraceae)	<i>Cirsium arvense</i>	Canada thistle	Reported
Convolvulaceae	<i>Convolvulus arvensis</i>	field bindweed	Present
Cruciferae (Brassicaceae)	<i>Lepidium latifolium</i>	broad-leaf pepperplant	Present
Gramineae (Poaceae)	<i>Sorghum halepense</i>	Johnsongrass	Present

---

This list is derived from the State of Utah Department of Agriculture and Food (2008) and Dewey and Andersen (2005).

## 4 Discussion

Since 1964, the known flora of Canyonlands National Park has nearly tripled, from 202 to 594 taxa, due to continuing floristic and vegetation research that has built on the baseline studies of Kleiner and Harper (1972), Loope (1977), Moore and Welsh (1965), and Welsh and Moore (1965) (Table 3.1, Appendices A and D). Based on available habitats and proximity, at least another 161 plant taxa may occur within the park (Appendix B). Should all of these potential species be found,

the documented flora of the park would increase by 21.3%. Many of the “missing” potential or reported taxa consist of cryptic species that flower late in the growing season or occur in undersampled wetland or weedy habitats. Confirmation of reported species should remain a high priority, as some of these taxa may ultimately prove to be erroneous. Additional studies would also be useful to better refine the abundance and distribution of species of high management interest (especially rare plants and invasive non-natives).



## 5 Literature Cited

- Albee, B. J., L. M. Shultz, and S. Goodrich. 1988. Atlas of the vascular plants of Utah. +Occasional Publ. 7. Salt Lake City: Utah Museum of Natural History. 670 pp.
- Anderson, J. 1983. Rare plant survey of the Needles Section, Canyonlands National Park. U.S. Fish and Wildlife Service. 24 pp.
- Baars, D. L. 2003. Geology of Canyonlands National Park. Pages 61–83 *in* Sprinkel, D. A., T. C. Chidsey, Jr., and P. B. Anderson, eds., *Geology of Utah's parks and monuments*. Utah Geological Association Publication 28 (second edition).
- Barkworth, M. E., K. M. Capels, S. Long, and M. B. Piep, eds. 2003. Magnoliophyta: Commelinidae (in part): Poaceae, part 2. *Flora of North America north of Mexico*, Volume 25. New York: Oxford University Press. 783 pp.
- Barkworth, M. E., K. M. Capels, S. Long, L. K. Anderton, and M. B. Piep, eds. 2007. Magnoliophyta: Commelinidae (in part): Poaceae, part 1. *Flora of North America north of Mexico*, Volume 24. New York: Oxford University Press. 911 pp.
- Barneby, R. C. 1989. Volume 3, Part B. Fabales. *In* Cronquist, A., A. H. Holmgren, N. H. Holmgren, J. L. Reveal, and P. K. Holmgren, eds. *Intermountain flora: Vascular plants of the Intermountain West, U.S.A. Bronx, N.Y.*: New York Botanical Garden. 279 pp.
- Boschen, N. 1985. Plant list, Canyonlands National Park, Utah. 16 pp.
- Chronic, H. 1988. Pages of stone: Geology of western national parks and monuments: Grand Canyon and the Plateau Country. Seattle, Wa.: The Mountaineers. 158 pp.
- Cronquist, A. 1994. Volume 5, Asterales. *In* Cronquist, A., A. H. Holmgren, N. H. Holmgren, J. L. Reveal, and P. K. Holmgren, eds. *Intermountain flora: Vascular plants of the Intermountain West, U.S.A. Bronx, N.Y.*: New York Botanical Garden. 496 pp.
- Cronquist, A., A. H. Holmgren, N. H. Holmgren, and J. L. Reveal, eds. 1972. Volume 1, Geological and botanical history of the region, its plant geography and a glossary. The vascular cryptogams and the gymnosperms. *Intermountain flora: Vascular plants of the Intermountain West, U.S.A. Bronx, N.Y.*: New York Botanical Garden. 270 pp.
- Cronquist, A., A. H. Holmgren, N. H. Holmgren, J. L. Reveal, and P. K. Holmgren, eds. 1977. Volume 6, The Monocotyledons. *Intermountain flora: Vascular plants of the Intermountain West, U.S.A. Bronx, N.Y.*: New York Botanical Garden. 584 pp.
- . 1984. Volume 4, Subclass Asteridae (except Asteraceae). *Intermountain flora: Vascular plants of the Intermountain West, U.S.A. Bronx, N.Y.*: New York Botanical Garden. 573 pp.
- Cronquist, A., N. H. Holmgren, and P. K. Holmgren, eds. 1997. Volume 3, Part A, Subclass Rosidae (except Fabales). *Intermountain flora: Vascular plants of the Intermountain West, U.S.A. Bronx, N.Y.*: New York Botanical Garden. 446 pp.
- Dewey, S., and K. Andersen. 2005. An inventory of invasive non-native plants in Canyonlands National Park (2004): Final report. Utah State University, Logan Ut. Weed Science Research Project Report # SD0513. 40 pp.
- Dorn, R. D. 2001. *Vascular plants of Wyoming*. Third edition. Cheyenne, Wy.: Mountain West Publishing. 412 pp.
- Evenenden, A., M. Miller, M. Beer, E. Nance, S. Daw, A. Wight, M. Estenson, and L. Cudlip. 2002. Northern Colorado Plateau Vital Signs Network and Prototype Cluster plan for natural resources monitoring: Phase I report. October 1. Two volumes. National Park Service, Northern Colorado Plateau Network, Moab, Ut. 138 pp + app.
- Fertig, W. 2006. Herbarium and field studies of vascular plant flora of CANY for National Park Service Inventory and Monitoring Program. Investigator's Annual Report, National Park Service. 2 pp.
- . 2007. Introduced and naturalized plants of Utah. *Sego Lily* 30(5):7–11.
- Flora of North America Editorial Committee. 1993. Pteridophytes and gymnosperms. *Flora of North America north of Mexico*, Volume 2. New York: Oxford University Press. 475 pp.
- . 1997. Magnoliophyta: Magnoliidae and Hamamelidae. *Flora of North America north of Mexico*, Volume 3. New York: Ox-

- ford University Press. 590 pp.
- . 2000. Magnoliophyta: Alismatidae, Arecidae, Commelinidae (in part), and Zingiberidae. *Flora of North America north of Mexico*, Volume 22. New York: Oxford University Press. 352 pp.
- . 2002a. Magnoliophyta: Commelinidae (in part): Cyperaceae. *Flora of North America north of Mexico*, Volume 23. New York: Oxford University Press. 608 pp.
- . 2002b. Magnoliophyta: Liliidae: Liliales and Orchidales. *Flora of North America north of Mexico*, Volume 26. New York: Oxford University Press. 723 pp.
- . 2003. Magnoliophyta: Caryophyllidae, part 1. *Flora of North America north of Mexico*. Volume 4. New York: Oxford University Press. 559 pp.
- . 2005. Magnoliophyta: Caryophyllidae, part 2. *Flora of North America north of Mexico*. Volume 5. New York: Oxford University Press. 656 pp.
- . 2006a. Magnoliophyta: Asteridae, part 6: Asteraceae, part 1. *Flora of North America north of Mexico*. Volume 19. New York: Oxford University Press. 579 pp.
- . 2006b. Magnoliophyta: Asteridae, part 7: Asteraceae, part 2. *Flora of North America north of Mexico*. Volume 20. New York: Oxford University Press. 666 pp.
- . 2006c. Magnoliophyta: Asteridae, part 8: Asteraceae, part 3. *Flora of North America north of Mexico*. Volume 21. New York: Oxford University Press. 616 pp.
- Fowler, J. F., N. L. Stanton, and R. L. Hartman. 2007. Distribution of hanging garden vegetation associations on the Colorado Plateau, USA. *Journal of the Botanical Research Institute of Texas* 1(1):585–607.
- Holmgren, N. H., P. K. Holmgren, and A. Cronquist. 2005. Volume 2, Part B Subclass Dilleniidae. *Intermountain flora: Vascular plants of the Intermountain West, U.S.A.* Bronx, N.Y.: New York Botanical Garden. 488 pp.
- Kleiner, E. F., and K. T. Harper. 1972. Environment and community organization in grasslands of Canyonlands National Park. *Ecology* 53(2):299–309.
- Loope, W. J. 1977. Relationships of vegetation to environment in Canyonlands National Park. Doctoral dissertation, Utah State University, Logan, Ut.
- Margules, C. R., and R. L. Pressey. 2000. Systematic conservation planning. *Nature* 405:243–253.
- Moore, G., and S. L. Welsh. 1965. Plants of Canyonlands National Park: II. Island in the Sky. *Proceedings of Utah Academy of Sciences, Arts, and Letters* 42(1).
- National Park Service (NPS). 2000. Management policies. Washington, D.C.: U.S. Department of Interior, National Park Service. Publication # NPS D1416. 137 pp.
- Northern Colorado Plateau Network (NCPN). in ed. Canyonlands National Park vegetation classification and mapping project. Natural Resource Technical Report. National Park Service, Denver, Co.
- Noss, R. F., and A. Y. Cooperrider. 1994. Saving nature's legacy: Protecting and restoring biodiversity. Washington, D.C.: Island Press. 416 pp.
- Schelz, C., and M. Moran. 2007. Southeast Utah Group threatened, endangered and species of concern. Southeast Utah Group (Arches NP, Canyonlands NP, Hovenweep NM, & Natural Bridges NM), Moab, Ut. 3 pp.
- Schelz, C., M. Moran, and A. Lafever. 2006. Southeast Utah Group plants. National Park Service Southeast Utah Group (Arches NP, Canyonlands NP, Hovenweep NM, & Natural Bridges NM), Moab, Ut. 16 pp.
- Shultz, L. M., R. D. Ramsey, and W. Lindquist. 2006. Revised atlas of Utah plants. College of Natural Resources, Utah State University, Logan, Ut. <http://earth.gis.usu.edu/plants>.
- Springer, A. E., L. E. Stevens, and R. Harms. 2006. Inventory and classification of selected National Park Service springs on the Colorado Plateau. Northern Arizona University, Flagstaff, Az. NPS Cooperative Agreement #CA 1200-99-009; Task # NAU-118.
- State of Utah Department of Agriculture and Food (SUDAF). 2008. Utah noxious weed list. <http://ag.utah.gov/divisions/plant/noxious/documents/noxUtah.pdf>.
- Utah Division of Wildlife Resources (UDWR). 1998. Inventory of sensitive species and

- ecosystems in Utah. Endemic and rare plants of Utah: An overview of their distribution and status. Report prepared for the Utah Reclamation Mitigation and Conservation Commission and U.S. Department of the Interior. 566 pp + app.
- Weber, W. A., and R. C. Wittmann. 2001. Colorado flora: Western Slope. Third edition. Boulder: University Press of Colorado. 488 pp.
- Welsh, S. L. 1970. Flora: "Canyonlands." *Naturalist* 21:26–37.
- . 1982. Utah plant types—Historical perspective, 1840 to 1981—annotated list, and bibliography. *Great Basin Naturalist* 42:1–44.
- Welsh, S. L., N. D. Atwood, S. Goodrich, and L. C. Higgins. 2003. A Utah flora. Third edition, revised. Provo, Ut: Brigham Young University. 912 pp.
- Welsh, S. L., and G. Moore. 1965. Plants of Canyonlands National Park: I. The Needles region. *Proceedings of Utah Academy of Sciences, Arts, and Letters*. 42(1).





# Appendices

The following appendices contain annotated checklists of the vascular flora of Canyonlands National Park.

Appendix A lists all species that have been confirmed for the flora with an authenticated voucher specimen (including extant and historical records), or that have been reliably reported for the park in the literature (Anderson 1983; Dewey and Andersen 2005; Kleiner and Harper 1972; Loope 1977; Moore and Welsh 1965; NCPN in ed.; Schelz et al. 2006; Springer et al. 2006; Welsh and Moore 1965). Vouchers were examined from the CANY herbarium (housed in the National Park Service's Southeast Utah Group office in Moab, Utah), and collections from Brigham Young University (BRY), Utah State University (USU), the University of Wyoming (RM), and the digital museum database of the New York Botanical Garden (NY). Species entries in Appendix A are organized alphabetically by family and genus.

Appendix B includes species that may potentially occur within Canyonlands NP, based on the proximity of the park to other populations or the presence of suitable habitat.

Appendix C lists species that have been previously reported for Canyonlands NP but are now considered erroneous because they are based on misidentified specimens or questionable literature records.

Appendix D contains the same confirmed, historical, and reported taxa as in Appendix A, but organized by life form rather than by family in order to better meet the needs of NPS interpretive specialists.

The codes and references for each field in the appropriate appendices are summarized below.

## Family (Appendices A, B, C, and D)

Family concepts and nomenclature follow *A Utah Flora, third edition* (Welsh et al. 2003). Alternative family names and treatments from other regional floras (Dorn 2001; Flora of North America Editorial Committee 1993, 2002b; Holmgren et al. 2005; Weber and Wittman 2001) are listed in parentheses.

## Species name (Appendices A, B, C, and D)

Nomenclature for scientific names and taxonomic concepts are derived from Welsh and others (2003). Scientific names are listed in alphabetical rather than phylogenetic order.

## Synonyms/Taxonomic notes (Appendices A, B, and C)

Pertinent synonyms are included for species with alternative scientific names in other recent state and regional floras (Barkworth et al. 2003, 2007; Barneby 1989; Cron-

quist 1994; Cronquist et al. 1972, 1977, 1984, 1997; Dorn 2001; Flora of North America Editorial Committee 1993, 1997, 2000, 2002a, 2002b, 2003, 2005, 2006a, 2006b, 2006c; Holmgren et al. 2005; Weber and Wittmann 2001). No effort has been made to identify additional synonyms from monographs and floras preceding the early 1970s.

## Common name (Appendices A, B, C, and D)

Common names are derived primarily from Welsh and others (2003) and the *Intermountain Flora* (Barneby 1989; Cronquist 1994; Cronquist et al. 1972, 1977, 1984, 1997; Holmgren et al. 2005).

## Life form (Appendices A, B, C, and D)

Life form is based on the stature and growth habit of typical members of a species at reproductive maturity. **Trees** are woody perennials with a single stem or trunk and are typically over 3.5 m tall. **Shrubs** are woody perennials with one to many trunks arising from near the base of the plant and are usually less than 3.5 m tall. **Perennial Forbs (PerF)** are broad-leaved dicots or monocots with non-woody stems (at least above ground level) that live for multiple years. **Annual Forbs (AnnF)** are broad-leaved dicots or monocots with non-woody stems that complete their life cycle (mature, flower, and die) in one year. **Perennial Graminoids (PerG)** are linear-leaved, grass-like monocots that live for multiple years. **Annual Graminoids (AnnG)** are linear-leaved, grass-like monocots that complete their life cycle (mature, flower, and die) in one year. **Ferns and fern-allies (Fern)** are non-flowering vascular plants that reproduce by spores.

## Range (Appendices A, B, and C)

Range represents the distribution of a species within Utah and the state's contribution to the plant's overall global range. **Disjunct (Disj)** taxa have their Utah distribution separated from the main, contiguous portion of their range by a gap of more than 800 km (ca 500 miles). **Introduced (Intro)** taxa are those that are not native to Utah or North America but which have become naturalized (breeding on their own without human assistance). **Local Endemics (LocEn)** are taxa whose entire global range is restricted to an area of less than 16,500 km<sup>2</sup> (ca 6,370 mi<sup>2</sup>, or 1° of latitude × 2° of longitude). **Peripheral (Periph)** taxa have a widespread global distribution but occur at the margin of their contiguous range in Utah and occupy less than 5% of the state's area (usually only within a few miles of the state border). **Regional Endemics (RegEn)** are taxa with a global range of 16,500–250,000 km<sup>2</sup> (an area about the size of the state of Wyoming). **Sparse** taxa occur widely across Utah or North America but their range within Utah is small and patchy, with populations restricted to specialized or uncommon habitats. **Widespread (Wide)** taxa have global ranges exceeding 250,000 km<sup>2</sup> and occur over at least 10% of the state.

### Park status (Appendices A, C, and D)

Park status identifies whether a species is Present (**Pres**), Historical (**Hist**), or Reported (**Rep**) for Canyonlands NP. Species are considered Present if a confirmed voucher or documented observation has been made within park boundaries since 1970. Historical species have been confirmed with a voucher from the park but have not been relocated since before 1970. Reported species are listed for the park in the literature (Anderson 1983; Dewey and Andersen 2005; Kleiner and Harper 1972; Loope 1977; Moore and Welsh 1965; NCPN in ed.; Schelz et al. 2006; Springer et al. 2006; Welsh and Moore 1965), but have not been corroborated with a voucher specimen. Species that may potentially occur in Canyonlands NP are listed in Appendix B. Rejected taxa (listed in Appendix C) have either been falsely reported (**FalsRep**) in the literature based on misidentified herbarium specimens or are considered Questionable (**Ques?**) because park reports are from well outside their known or expected range.

### Pop. size (Appendix A)

Population size refers to the abundance and frequency with which a species occurs within Canyonlands NP. Abundance data are derived from Loope (1977), NCPN (in ed.), and personal observations. Abundant (**Abun**) taxa have large populations, have a broad ecological amplitude (often being dominant in one-to-several vegetation types), or occur extensively across the park. Common (**Com**) taxa have large local populations but may be restricted to a single vegetation type or do not occur across the entire park. Uncommon (**Unc**) taxa have low to medium-sized populations, typically have a narrow ecological amplitude (or at least contribute relatively little to total vegetative cover), or have a small range across the park. Rare taxa usually have low population numbers and are restricted to a single location within the park. A “?” indicates that population size is unknown.

### Source (Appendix A)

Sources are the evidence for the assigned park status. In the case of Present and Historical taxa, sources are herbarium records (with collector, collection number, and repository) that were corroborated during this study. For reported taxa, the source is a published or unpublished reference citing the species within the park. Specimen repositories include the Canyonlands NP herbarium (**CANY**), Brigham Young University (**BRY**), Utah State University (**USU**), New York Botanical Garden (**NY**), and the University of Wyoming's Rocky Mountain Herbarium (**RM**).

### Year doc. (Appendix A)

Year documented indicates the first year in which a species was confirmed or reported to occur in Canyonlands NP. This year does not necessarily correspond with the date of the voucher specimen cited under Source. “NA” indicates that the first year is not known (used mostly for “reported” taxa).

### Comments (Appendices A, B, C, and D)

This column includes additional comments on the status of a particular species in the park, the place of origin for introduced species, legal status, and other data.

### Nativity (Appendix D)

Nativity indicates whether a species is native to Utah or Introduced (**Intro**) based on Fertig (2007).

### Flower time (Appendix D)

Flower time refers to the months in which a species is most likely to be in flower. NA indicates a species that is a non-flowering fern or gymnosperm.

### Habitat (Appendix D)

The distribution of species across generalized habitats in Canyonlands NP is indicated by an “x” in the columns **BlckBr** through **Wet**, and is derived from the Canyonlands NP vegetation classification (NCPN in ed.), Loope (1977), and Welsh and others (2003). **BlckBr** = Blackbrush, **Salt** = Salt desert scrub dominated by *Atriplex* spp., **SageGrs** = Desert grasslands and Basin big sagebrush vegetation types, **PinJun** = Pinyon-Juniper woodlands/rimrock, **Wet** = Wetlands (including hanging gardens). Additional comments are included for species that are restricted to a particular soil/geologic type or are found mostly in disturbed sites or patches of Douglas-fir alcove forest.

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Aceraceae	<i>Acer glabrum</i> var. <i>glabrum</i>	Includes vars. <i>neomexicanum</i> , <i>douglasii</i> , & <i>tripartitum</i>	Rocky Mountain maple	Shrub	Wide	Pres	Rare	Welsh 8816 (BRY)	1968	
Aceraceae	<i>Acer grandidentatum</i>		bigtooth maple	Tree	Wide	Pres	Rare	Anderson s.n. (BRY)	1983	
Aceraceae	<i>Acer negundo</i>	<i>A. negundo</i> var. <i>interius</i> , <i>Negundo aceroides</i> ssp. <i>Interius</i>	box elder	Tree	Wide	Pres	Rare	Welsh 7027 (BRY)	1968	
Agavaceae	<i>Yucca angustissima</i>	<i>Y. angustissima</i> var. <i>angustissima</i>	narrowleaved yucca	Shrub	RegEn	Pres	Com	Welsh, Moore & Canter 2919 (CANY)	1964	
Agavaceae	<i>Yucca baccata</i>	<i>Y. baccata</i> var. <i>baccata</i>	datil yucca	Shrub	Wide	Pres	Unc	Welsh, Moore & Canter 2910 (CANY)	1964	
Agavaceae	<i>Yucca harrimaniae</i> var. <i>harrimaniae</i>		Harriman's yucca	Shrub	Wide	Pres	Unc	Belnap 101 (CANY)	1987	Type locality is Helper, Carbon Co., UT (Trelease s.n. MO)
Agavaceae	<i>Yucca toftiae</i>	<i>Y. angustissima</i> var. <i>toftiae</i>	Toft's yucca	Shrub	LocEn	Pres	Unc	Belnap 200 (CANY)	1987	Type locality is ca 1 mi N of confluence of San Juan & Colorado rivers, San Juan Co., UT (Welsh 11935a BRY). USFW5: 3C
Aizoaceae	<i>Sesuvium verrucosum</i>		sea purslane	PerF	Wide	Pres	Unc	Welsh 22620 (CANY)	1983	
Amaranthaceae	<i>Amaranthus albus</i>		tumble pigweed	AnnF	Intro	Rep	?	Schelz et al. (2006)	NA	Native to tropical America
Amaranthaceae	<i>Amaranthus blitoides</i>	<i>A. graecizans</i>	prostrate pigweed	AnnF	Wide	Pres	Unc	Chrobak-Cox s.n. (CANY)	1987	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Amaranthaceae	<i>Amaranthus retroflexus</i>		redroot pigweed	AnnF	Intro	Pres	Unc	Moran s.n. (CANY)	2007	Native to Central America
Anacardiaceae	<i>Rhus aromatica</i> var. <i>simplificifolia</i>	<i>R. trilobata</i> var. <i>simplificifolia</i>	squawbush	Shrub	Wide	Pres	Com	Heil, Porter, & Fleming 6002 (CANY)	1964	
Anacardiaceae	<i>Rhus aromatica</i> var. <i>trilobata</i>	<i>R. trilobata</i> var. <i>trilobata</i>	squawbush	Shrub	Wide	Pres	Unc	Thorne & Thorne s.n. (BRY)	1987	
Anacardiaceae	<i>Toxicodendron rydbergii</i>	<i>Rhus radicans</i> , <i>T. radicans</i>	western poison ivy	Shrub	Wide	Pres	Unc	Welsh Moore, 1964 & Canter 3012 (CANY)	1964	
Apocynaceae	<i>Amsonia jonesii</i>		Jones' amsonia	PerF	RegEn	Rep	?	Schelz et al. (2006)	NA	
Apocynaceae	<i>Amsonia tomentosa</i> var. <i>stenophylla</i>	<i>A. tomentosa</i> , <i>A. eastwoodiana</i>	tomentose amsonia	PerF	Wide	Pres	Unc	Heil & Fleming 6089 (CANY)	1979	Type locality of <i>A. eastwoodiana</i> is Moab vicinity, Grand Co., UT (Rydberg & Garrett 8468 NY)
Apocynaceae	<i>Apocynum cannabinum</i>	Includes vars. <i>cannabinum</i> , <i>glaberrimum</i> , & <i>angustifolium</i>	common dogbane	PerF	Wide	Pres	Unc	Belnap 274 (CANY)	1964	
Asclepiadaceae	<i>Asclepias asperula</i> var. <i>asperula</i>		spider milkweed	PerF	Wide	Pres	Unc	Debolt 382 (CANY)	1964	
Asclepiadaceae	<i>Asclepias labriformis</i>		Circle Cliffs milkweed	PerF	RegEn	Rep	?	Loope (1977)	NA	Type locality is Capitol Wash, Wayne Co., UT (Jones 5650 POM)
Asclepiadaceae	<i>Asclepias latifolia</i>		broadleaf milkweed	PerF	Wide	Pres	Unc	Welsh, Moore & Olsen 3741 (CANY)	1964	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Asclepiadaceae	<i>Asclepias macrosperma</i>	Included in <i>A. involuocrata</i> by some authors	bigseed milkweed	PerF	RegEn	Pres	Unc	Heil, Porter, & Fleming 5893 (CANY)	1964	
Asclepiadaceae	<i>Asclepias rusbyi</i>	<i>A. engelmanniana</i> var. <i>rusbyi</i>	Rusby's milkweed	PerF	RegEn	Pres	Rare	Welsh, Moore & Canter 2930 (CANY)	1964	
Asclepiadaceae	<i>Asclepias ruthiae</i>	<i>A. uncialis</i> ssp. <i>ruthiae</i>	Ruth's milkweed	PerF	RegEn	Pres	Rare	Cox s.n. (CANY)	1998	Type locality is Calf Spring Canyon SE of Castledale, Emery Co., UT (Maguire 18310 UTC)
Asclepiadaceae	<i>Asclepias speciosa</i>		showy milkweed	PerF	Wide	Pres	Unc	Belnap 403 (CANY)	1987	
Asclepiadaceae	<i>Asclepias subverticillata</i>	<i>A. galloides</i>	whorled milkweed	PerF	Wide	Pres	Unc	Kitchell 253 (CANY)	1982	
Asclepiadaceae	<i>Asclepias tuberosa</i> var. <i>interior</i>	<i>A. tuberosa</i> ssp. <i>terminalis</i>	orange milkweed	PerF	Wide	Pres	Unc	Welsh 5392 (CANY)	1966	
Asclepiadaceae	<i>Sarcostemma cynanchoides</i> var. <i>hartwegii</i>	<i>Funastrum cynanchoides</i> ssp. <i>heterophyllum</i>	climbing milkweed	PerF	Periph	Pres	Rare	Heil & Fleming 6072 (CANY)	1990	
Berberidaceae	<i>Berberis fendleri</i>		Fendler's barberry	Shrub	RegEn	Pres	Unc	Fowler & May 1586 (CANY)	1965	
Berberidaceae	<i>Mahonia fremontii</i>	<i>Berberis fremontii</i>	Fremont's mahonia	Shrub	Wide	Pres	Com	Welsh, Moore & Canter 2960 (CANY)	1964	
Berberidaceae	<i>Mahonia repens</i>	<i>Berberis repens</i>	Oregon-grape	Shrub	Wide	Pres	Rare	Topp ST082804001 (CANY)	2004	
Betulaceae	<i>Betula occidentalis</i>	<i>B. fontinalis</i>	water birch	Tree	Wide	Pres	Rare	Fowler & May 1556 (RM)	1983	
Betulaceae	<i>Ostrya knowltonii</i>		western hop-hornbeam	Tree	RegEn	Pres	Unc	Heil, Porter, & Fleming 2961 (CANY)	1964	
Bignoniaceae	<i>Catalpa bignonioides</i>		common catalpa	Tree	Intro	Rep	?	Schelz et al. (2006)	NA	Native to E North America

Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Boraginaceae	<i>Cryptantha bakeri</i>	<i>Oreocarya bakeri</i>	Baker's cryptanth	PerF	RegEn	Pres	Rare	Anderson s.n. (BRY)	1983	
Boraginaceae	<i>Cryptantha cinerea</i> var. <i>pustulosa</i>	<i>Cryptantha pustulosa</i>	San Juan cryptanth	PerF	RegEn	Pres	Rare	Anderson s.n. (BRY)	1983	Type locality is Elk Mts, San Juan Co., UT (Rydberg & Garrett 9320 NY)
Boraginaceae	<i>Cryptantha confertiflora</i>		basin yellow cryptanth	PerF	Wide	Rep	?	Loope (1977)	NA	
Boraginaceae	<i>Cryptantha crassisejala</i> var. <i>elachantha</i>		thick-sepaled cryptanth	AnnF	Wide	Pres	Unc	Welsh, Moore & Canter 2834 (CANY)	1964	
Boraginaceae	<i>Cryptantha flava</i>	<i>Oreocarya flava</i>	plateau yellow cryptanth	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2864 (CANY)	1964	
Boraginaceae	<i>Cryptantha flavoculata</i>	<i>Oreocarya flavoculata</i>	yellow-eye cryptanth	PerF	Wide	Pres	Unc	Belnap 210 (CANY)	1987	
Boraginaceae	<i>Cryptantha fulvocanescens</i>	<i>Oreocarya fulvocanescens</i> . Includes vars. <i>fulvocanescens</i> & <i>echinoides</i>	plateau cryptanth	PerF	RegEn	Pres	Unc	Welsh & Chatterley 21880 (CANY)	1964	Type locality of var. <i>echinoides</i> is Paria Canyon, Garfield Co., UT (Jones 5297p POM)
Boraginaceae	<i>Cryptantha gracilis</i>		slender cryptanth	AnnF	Wide	Pres	Rare	Johnson 18 (CANY)	1979	
Boraginaceae	<i>Cryptantha kelseyana</i>		Kelsey's cryptanth	AnnF	Wide	Pres	Rare	Moore 233 (BRY)	1964	
Boraginaceae	<i>Cryptantha osterhoutii</i>	<i>Oreocarya osterhoutii</i>	Osterhout's cryptanth	PerF	RegEn	Pres	Unc	Heil, Fleming, & Porter 5905 (CANY)	1964	Type locality is Monument Park [Colorado National Monument], near Grand Junction, Mesa Co., CO (Osterhout 6138 RM)

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Boraginaceae	<i>Cryptantha pterocarya</i> var. <i>pterocarya</i>		wing-nut cryptanth	AnnF	Wide	Pres	Unc	Scholz s.n. (CANY)	1997	
Boraginaceae	<i>Cryptantha recurvata</i>		recurved cryptanth	AnnF	Wide	Pres	Unc	Welsh & Chatterley 21864 (CANY)	1983	
Boraginaceae	<i>Cryptantha tenuis</i>		slender cryptanth	PerF	RegEn	Pres	Unc	Welsh 21806 (CANY)	1979	Type locality is Courthouse Wash, Grand Co., UT (Eastwood s.n. CAS)
Boraginaceae	<i>Heliotropium convolvulaceum</i>	<i>Euploca convolvulacea</i> ssp. <i>californica</i>	bindweed heliotrope	AnnF	Wide	Pres	Rare	Belnap 330 (CANY)	1987	
Boraginaceae	<i>Lappula occidentalis</i> var. <i>cupulata</i>	<i>L. texana</i> , <i>L. redowskii</i> var. <i>cupulata</i> , <i>L. marginata</i>	cupseed stickseed	AnnF	Wide	Pres	Unc	Belnap 245 (CANY)	1967	
Boraginaceae	<i>Lithospermum incisum</i>		showy stone seed	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2991 (CANY)	1964	
Boraginaceae (Ehretiaceae)	<i>Tiquilia latior</i>	<i>Coldenia hispidissima</i>	matted tiquilia	PerF	RegEn	Pres	Unc	Heil & Fleming 6096 (CANY)	1983	
Cactaceae	<i>Echinocereus engelmannii</i> var. <i>variegatus</i>	<i>E. engelmannii</i> var. <i>decumbens</i> . Vars. not recognized in <i>Flora of North America</i> (2003)	Glen Canyon hedgehog cactus	PerF	RegEn	Rep	?	Scholz et al. (2006)	NA	
Cactaceae	<i>Echinocereus triglochidiatus</i> var. <i>melanacanthus</i>	Includes var. <i>inermis</i> . Vars. not recognized in <i>Flora of North America</i> (2003).	claretcup	PerF	Wide	Pres	Unc	Debolt 168 (CANY)	1968	
Cactaceae	<i>Opuntia basilaris</i> var. <i>basilaris</i>		beavertail cactus	PerF	Periph	Rep	?	Scholz et al. (2006)	NA	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Cactaceae	<i>Opuntia erinacea</i> var. <i>utahensis</i>	<i>O. polyacantha</i> var. <i>hystricina</i> . Var. not recognized in <i>Flora of North America</i> (2003)	Utah pricklypear	PerF	Wide	Pres	Com	Welsh 5396 (CANY)	1966	
Cactaceae	<i>Opuntia phaeacantha</i> var. <i>major</i>	Vars. not recognized in <i>Flora of North America</i> (2003)	large pricklypear	PerF	Wide	Pres	Unc	Welsh 7031 (CANY)	1968	
Cactaceae	<i>Opuntia polyacantha</i> var. <i>polyacantha</i>	<i>Flora of North America</i> (2003) includes vars. <i>rufispina</i> & <i>trichophora</i>	plains prickly-pear	PerF	Wide	Pres	Unc	Topp ST052204001 (CANY)	2004	
Cactaceae	<i>Sclerocactus whipplei</i> var. <i>roseus</i>	<i>S. parviflorus</i> , <i>S. whipplei</i> var. <i>intermedius</i> . Includes <i>S. contortus</i> & <i>S. terrae-canyonae</i>	small-flower fishhook cactus	PerF	Wide	Pres	Unc	Welsh & Chatterley 21879 (CANY)	1968	Type locality of <i>S. parviflorus</i> is Glen Canyon, San Juan Co., UT (Clover & Jotter 2398 US)
Capparaceae (Cleomaceae)	<i>Cleome lutea</i>		yellow beeplant	AnnF	Wide	Pres	Unc	Welsh, Moore & Olsen 3711 (CANY)	1964	
Capparaceae (Cleomaceae)	<i>Cleome serrulata</i>		Rocky Mountain beeplant	AnnF	Wide	Pres	Unc	Chrobak 407 (CANY)	1985	
Caprifoliaceae	<i>Symphoricarpos longiflorus</i>		long-flower snowberry	Shrub	Wide	Pres	Unc	Heil & Fleming 6088 (CANY)	1964	
Caryophyllaceae (Alsinaeeae)	<i>Arenaria fendleri</i> var. <i>eastwoodiae</i>	<i>Eremogone eastwoodiae</i> var. <i>eastwoodiae</i> , <i>A. eastwoodiae</i>	Eastwood's sandwort	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2902 (CANY)	1964	
Caryophyllaceae	<i>Silene antirrhina</i>		sleepy catchfly	AnnF	Wide	Pres	Unc	Heil, Fleming, & Porter 5975 (CANY)	1964	



**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Celastraceae	<i>Pachystima myrsinites</i>	<i>Pachystima myrsinites</i> , <i>Pachystima myrsinites</i>	mountain-lover	Shrub	Wide	Pres	Rare	Anderson s.n. (BRY)	1983	
Chenopodiaceae	<i>Atriplex canescens</i> var. <i>canescens</i>	<i>A. canescens</i> var. <i>occidentalis</i>	fourwing saltbush	Shrub	Wide	Pres	Com	Welsh, Moore & Olsen 3688 (CANY)	1964	
Chenopodiaceae	<i>Atriplex confertifolia</i>		shadscale	Shrub	Wide	Pres	Unc	Welsh, Moore & Canter 2952 (CANY)	1964	
Chenopodiaceae	<i>Atriplex dioica</i>	<i>A. subspicata</i> , <i>A. patula</i> var. <i>subspicata</i>	thickleaf orache	AnnF	Wide	Pres	Rare	Rink 4606 (CANY)	2005	Originally reported as <i>Endolepis dioica</i> , a species not known from UT.
Chenopodiaceae	<i>Atriplex gardneri</i> var. <i>cuneata</i>	<i>A. cuneata</i>	Castle Valley saltbush	Shrub	RegEn	Pres	Unc	Welsh 21805 (CANY)	1983	Type locality is near Emery, Emery Co., UT (Jones 5443 RM)
Chenopodiaceae	<i>Atriplex garrettii</i> var. <i>garrettii</i>		Garrett's saltbush	Shrub	LocEn	Pres	Unc	Belnap 517 (CANY)	1988	Type locality is vicinity of Moab, Grand Co., UT (Rydberg & Garrett 8465 NY)
Chenopodiaceae	<i>Atriplex heterosperma</i>	<i>A. micrantha</i>	two-seed orache	AnnF	Intro	Hist	Rare	Wiens s.n. (NY)	1965	
Chenopodiaceae	<i>Atriplex rosea</i>		tumbling orach	AnnF	Intro	Pres	Unc	Welsh, Moore & Olsen 3742 (CANY)	1964	Native to Eurasia
Chenopodiaceae	<i>Bassia americana</i>	<i>Kochia americana</i>	greenmolly	PerF	Wide	Pres	Unc	Belnap 186 (CANY)	1987	
Chenopodiaceae	<i>Bassia hyssopifolia</i>		five-horn smotherweed	AnnF	Intro	Pres	Unc	Welsh, Moore & Olsen 3745 (CANY)	1964	Native to Eurasia

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Chenopodiaceae	<i>Bassia scoparia</i>	<i>Kochia scoparia</i> , <i>B. sieversiana</i>	summer-cypress	AnnF	Intro	Pres	Unc	Belnap 141 (CANY)	1987	Native to Eurasia
Chenopodiaceae	<i>Chenopodium album</i> var. <i>album</i>	<i>C. album</i>	lambquarter	AnnF	Intro	Pres	Unc	Belnap 328 (CANY)	1978	Native to Eurasia
Chenopodiaceae	<i>Chenopodium atrovirens</i>	<i>C. fremontii</i> var. <i>atrovirens</i>	mountain goosefoot	AnnF	Wide	Pres	Unc	Welsh, Moore & Olsen 3714 (CANY)	1964	
Chenopodiaceae	<i>Chenopodium fremontii</i> var. <i>fremontii</i>	<i>C. fremontii</i>	Fremont's goosefoot	AnnF	Wide	Pres	Unc	Welsh, Moore & Olsen 3743 (CANY)	1964	
Chenopodiaceae	<i>Chenopodium leptophyllum</i>		narrow-leaf goosefoot	AnnF	Wide	Pres	Unc	Welsh, Moore & Olsen 3764 (CANY)	1964	
Chenopodiaceae	<i>Corispermum americanum</i>	Includes vars. <i>americanum</i> & <i>rydbergii</i> in <i>Flora of North America</i> (2003)	American bugseed	AnnF	Wide	Pres	Unc	Welsh, Moore & Olsen 3763 (CANY)	1964	
Chenopodiaceae	<i>Cycloloma atriplicifolia</i>	<i>C. atriplicifolium</i>	winged pigweed	AnnF	Wide	Pres	Unc	Belnap 433 (CANY)	1987	
Chenopodiaceae	<i>Grayia spinosa</i>	<i>Atriplex spinosa</i> , <i>A. grayi</i>	spiny hopsage	Shrub	Wide	Pres	Unc	Topp, S. personal observation	2007	
Chenopodiaceae	<i>Halogeton glomeratus</i>		halogeton	AnnF	Intro	Pres	Unc	Welsh 22607 (CANY)	1978	Native to Eurasia
Chenopodiaceae	<i>Krascheninnikovia lanata</i> var. <i>lanata</i>	<i>Ceratoides lanata</i> , <i>Eurotia lanata</i> . Vars. not recognized in <i>Flora of North America</i> (2003)	winterfat	Shrub	Wide	Pres	Unc	Welsh, Moore & Olsen 3730 (CANY)	1964	
Chenopodiaceae	<i>Krascheninnikovia lanata</i> var. <i>ruinina</i>	<i>Ceratoides lanata</i> var. <i>ruinina</i> . Vars. not recognized in <i>Flora of North America</i> (2003).	Ruin Park winterfat	Shrub	LocEn	Pres	Unc	Allen 106 (CANY)	1978	Type locality is Ruin Park, San Juan Co., UT (Welsh & Welsh 22377 BRY).

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Chenopodiaceae	<i>Monolepis nuttalliana</i>		Nuttall's poverty-weed	AnnF	Wide	Pres	Unc	Scholz s.n. (CANY)	2001	
Chenopodiaceae	<i>Salsola paulsenii</i>		barbwire Russian thistle	AnnF	Intro	Pres	Unc	Welsh 22629 (CANY)	1983	Native to Eurasia
Chenopodiaceae	<i>Salsola tragus</i>	<i>S. kali</i> , <i>S. iberica</i> , <i>S. pestifer</i> , <i>S. australis</i>	Russian thistle	AnnF	Intro	Pres	Unc	Allen 105 (CANY)	1967	Native to Asia
Chenopodiaceae (Sarcobataceae)	<i>Sarcobatus vermiculatus</i>		greasewood	Shrub	Wide	Pres	Unc	Debolt 237 (CANY)	1983	
Chenopodiaceae	<i>Suaeda torreyana</i> var. <i>torreyana</i>	<i>S. moquinii</i> , <i>S. nigra</i> , <i>S. fruticosa</i>	Torrey's seepweed	AnnF	Wide	Pres	Unc	Welsh, Moore & Olsen 3685 (CANY)	1964	
Chenopodiaceae	<i>Zuckia brandegeei</i> var. <i>brandegeei</i>	<i>Atriplex brandegei</i>	Brandegee's siltbush	Shrub	RegEn	Pres	Rare	Topp ST092604003 (CANY)	1972	Type locality is San Juan River, San Juan Co., UT (Brandegee s.n. GH)
Compositae (Asteraceae)	<i>Ambrosia acanthicarpa</i>	<i>Franseria acanthicarpa</i>	bur ragweed	AnnF	Wide	Pres	Unc	Welsh, Moore & Olsen 3681 (CANY)	1964	
Compositae (Asteraceae)	<i>Ambrosia tomentosa</i>	<i>Franseria tomentosa</i>	skeleton-leaf bursage	PerF	Wide	Pres	Rare	Welsh 22645 (CANY)	1983	
Compositae (Asteraceae)	<i>Antennaria marginata</i>	Includes records of <i>A. neglecta</i> from UT	sandstone pussytoes	PerF	Wide	Pres	Rare	Anderson s.n. (BRY)	1983	
Compositae (Asteraceae)	<i>Arctium minus</i>		burdock	PerF	Intro	Pres	Rare	Moran s.n. (CANY)	2004	Native to Eurasia
Compositae (Asteraceae)	<i>Artemisia bigelovii</i>		Bigelow's sagebrush	Shrub	Wide	Pres	Com	Welsh 22606 (CANY)	1964	
Compositae (Asteraceae)	<i>Artemisia campestris</i> var. <i>scouleriana</i>	<i>Oligosporus campestris</i> ssp. <i>pacificus</i> , <i>O. pacificus</i> , <i>A. campestris</i> ssp. <i>pacifica</i>	sand wormwood	PerF	Wide	Pres	Unc	Belnap 282 (CANY)	1964	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonymic/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Compositae (Asteraceae)	<i>Artemisia dracunculus</i> var. <i>glauca</i>	<i>Oligosporus dracunculus</i> , Var. not recognized in Cronquist (1994) & <i>Flora of North America</i> (2006)	tarragon	Perf	Wide	Pres	Unc	Welsh, Moore & Olsen 3676 (CANY)	1964	
Compositae (Asteraceae)	<i>Artemisia filifolia</i>	<i>Oligosporus filifolius</i>	sand sagebrush	Shrub	Wide	Pres	Unc	Welsh, Moore & Olsen 3776 (CANY)	1964	
Compositae (Asteraceae)	<i>Artemisia frigida</i>		fringed sagebrush	Shrub	Wide	Pres	Unc	Hahn LAH09140309 (CANY)	1987	
Compositae (Asteraceae)	<i>Artemisia ludoviciana</i> var. <i>albula</i>		Louisiana wormwood	Perf	Wide	Pres	Unc	Welsh, Moore & Olsen 3694 (CANY)	1964	
Compositae (Asteraceae)	<i>Artemisia ludoviciana</i> var. <i>ludoviciana</i>		Louisiana wormwood	Perf	Wide	Pres	Rare	Welsh, Moore & Olson 3694 (BRY)	1964	CANY material intergrades with var. <i>albula</i> .
Compositae (Asteraceae)	<i>Artemisia ludoviciana</i> var. <i>mexicana</i>		Louisiana wormwood	Perf	Wide	Pres	Unc	Welsh, Moore & Olsen 3713 (CANY)	1964	
Compositae (Asteraceae)	<i>Artemisia nova</i> var. <i>nova</i>	<i>A. arbuscula</i> var. <i>nova</i> , <i>Seriphidium novum</i> . Vars. not recognized in <i>Flora of North America</i> (2006)	black sagebrush	Shrub	Wide	Rep	?	Scholz et al. (2006)	NA	
Compositae (Asteraceae)	<i>Artemisia spinescens</i>	<i>Picrothamnus desertorum</i>	budsage	Shrub	Wide	Pres	Unc	Chrobak 428 (CANY)	1973	
Compositae (Asteraceae)	<i>Artemisia tridentata</i> var. <i>tridentata</i>	<i>Seriphidium tridentatum</i> ssp. <i>tridentatum</i>	basin big sagebrush	Shrub	Wide	Pres	Com	Welsh, Moore & Canter 2958 (CANY)	1964	
Compositae (Asteraceae)	<i>Aster ascendens</i>	<i>A. chilensis</i> ssp. <i>adscendens</i> , <i>Symphotrichum ascendens</i> , <i>Virgulaster ascendens</i>	Pacific aster	Perf	Wide	Pres	Unc	Welsh, Moore & Olsen 3751 (CANY)	1964	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonymic/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Compositae (Asteraceae)	<i>Aster frondosus</i>	<i>Symphotrichum frondosum</i> , <i>Brachyactis frondosa</i>	leafy aster	AnnF	Wide	Pres	Unc	Welsh, Moore & Olsen 3787 (CANY)	1964	
Compositae (Asteraceae)	<i>Aster glaucodes</i>	<i>Herrickia glauca</i> var. <i>glauca</i> , <i>Eurybia glauca</i> , <i>Eucephalus glaucus</i>	blueleaf aster	PerF	Wide	Pres	Unc	Topp SET09260302 (CANY)	2003	
Compositae (Asteraceae)	<i>Aster pansus</i>	<i>A. ericoides</i> var. <i>pansus</i> , <i>Symphotrichum ericoides</i> var. <i>pansum</i> , <i>Virgulus ericoides</i>	white heath aster	PerF	Wide	Pres	Unc	Welsh, Moore & Olsen 3770 (CANY)	1964	
Compositae (Asteraceae)	<i>Aster spathulatus</i>	<i>A. occidentalis</i> , <i>Symphotrichum spathulatum</i>	western aster	PerF	Wide	Pres	Rare	Schelz s.n. (CANY)	1997	
Compositae (Asteraceae)	<i>Aster spinosus</i>	<i>Chloracantha spinosa</i> var. <i>spinosus</i>	Mexican devilweed	PerF	Wide	Pres	Unc	Belnap 355 (CANY)	1983	
Compositae (Asteraceae)	<i>Baccharis salicina</i>	Includes <i>B. emoryi</i>	Rio Grande seepwillow	Shrub	Wide	Pres	Unc	Welsh 22613 (CANY)	1983	
Compositae (Asteraceae)	<i>Baccharis viminea</i> var. <i>atwoodii</i>	Included in <i>B. salicifolia</i> in <i>Flora of North America</i> (2006)	Atwood's mule-fat	Shrub	LocEn	Pres	Unc	Belnap 225 (BRY)	1987	Type locality is 1 mi E of San Juan River, San Juan Co., UT (Atwood et al. 22406 BRY). Duplicate at CANY is <i>B. salicina</i> .
Compositae (Asteraceae)	<i>Bidens cernua</i>		nodding bur-marigold	PerF	Wide	Pres	Rare	Rink 4607 (CANY)	2005	Originally reported as <i>Bidens tripartita</i> .
Compositae (Asteraceae)	<i>Brickellia californica</i>		California brickellbush	Shrub	Wide	Pres	Unc	Welsh, Moore & Olsen 3686 (CANY)	1964	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Compositae (Asteraceae)	<i>Brickellia longifolia</i>	<i>B. longifolia</i> var. <i>longifolia</i>	longleaf brickellbush	Shrub	Wide	Pres	Unc	Welsh 22628 (CANY)	1964	
Compositae (Asteraceae)	<i>Brickellia microphylla</i> var. <i>scabra</i>		rough brickellbush	Shrub	Wide	Pres	Unc	Welsh, Moore & Olsen 3692 (CANY)	1964	
Compositae (Asteraceae)	<i>Brickellia oblongifolia</i> var. <i>linifolia</i>		Mohave brickellbush	Shrub	Wide	Pres	Unc	Belnap 208 (CANY)	1987	Type locality of var. <i>linifolia</i> is American Fork, Jordan Valley, Utah Co., UT (Watson 493 YU)
Compositae (Asteraceae)	<i>Carduus nutans</i>	Includes ssp. <i>leiophyllus</i> & <i>macrolepis</i>	musk thistle	Perf	Intro	Rep	Rare	Dewey & Andersen (2005)	2004	Utah state noxious weed. Native to Eurasia
Compositae (Asteraceae)	<i>Centaurea diffusa</i>	<i>Acosta diffusa</i>	diffuse knapweed	Perf	Intro	Pres	Rare	Andersen CANY V-1 (CANY)	2003	Utah state noxious weed. Native to Mediterranean
Compositae (Asteraceae)	<i>Centaurea repens</i>	<i>Acroptilon repens</i>	Russian knapweed	Perf	Intro	Pres	Unc	Chrobak 449 (CANY)	1985	UT state noxious weed. Native to Eurasia
Compositae (Asteraceae)	<i>Chaenactis stevioides</i>		stevia dusty- maiden	AnnF	Wide	Pres	Unc	Allen 219 (CANY)	1964	
Compositae (Asteraceae)	<i>Chaetopappa ericoides</i>	<i>Leucelene ericoides</i> , <i>Aster arenosus</i>	rose-heath	Perf	Wide	Pres	Unc	Debolt 222 (CANY)	1967	
Compositae (Asteraceae)	<i>Chrysopsis villosa</i> var. <i>minor</i>	<i>C. villosa</i> var. <i>hispida</i> , <i>Heterotheca villosa</i> var. <i>hispida</i> , <i>H. villosa</i> var. <i>minor</i>	hispid golden-aster	Perf	Wide	Pres	Com	Thorne, Thomas, & Inskip 5160 (CANY)	1964	
Compositae (Asteraceae)	<i>Chrysopsis villosa</i> var. <i>villosa</i>	<i>H. villosa</i> var. <i>villosa</i>	hairy golden-aster	Perf	Sparse	Rep	?	Schelz et al. (2006)	NA	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Compositae (Asteraceae)	<i>Chrysothamnus linifolius</i>	<i>Lorandersonia linifolia</i>	spear-leaf rabbitbrush	Shrub	Wide	Pres	Unc	Welsh, Moore, & Olsen 3766 (CANY)	1964	
Compositae (Asteraceae)	<i>Chrysothamnus nauseosus</i> var. <i>consimilis</i>	<i>Ericameria nauseosa</i> var. <i>consimilis</i> , <i>E. nauseosa</i> var. <i>oreophila</i> , <i>C. nauseosus</i> var. <i>oreophilus</i>	greenish rabbitbrush	Shrub	Wide	Pres	Com	Fertig 23013 (CANY)	2006	
Compositae (Asteraceae)	<i>Chrysothamnus nauseosus</i> var. <i>gnaphalodes</i>	<i>C. nauseosus</i> var. <i>hololeucus</i> , <i>Ericameria nauseosa</i> var. <i>hololeuca</i>	graystem rabbitbrush	Shrub	Wide	Pres	Com	Fertig 23015 (CANY)	2006	
Compositae (Asteraceae)	<i>Chrysothamnus nauseosus</i> var. <i>graveolens</i>	<i>Ericameria nauseosa</i> var. <i>graveolens</i> , <i>E. nauseosa</i> var. <i>glabrata</i>	glabrate rabbitbrush	Shrub	Wide	Pres	Unc	Welsh & Moore 3847 (CANY)	1964	
Compositae (Asteraceae)	<i>Chrysothamnus nauseosus</i> var. <i>junceus</i>	<i>Ericameria nauseosa</i> var. <i>junceus</i>	rush rabbitbrush	Shrub	RegEn	Pres	Com	Welsh & Moore 3848 (CANY)	1964	
Compositae (Asteraceae)	<i>Chrysothamnus nauseosus</i> var. <i>leiospermus</i>	<i>Ericameria nauseosa</i> var. <i>leiosperma</i>	smoothseed rabbitbrush	Shrub	RegEn	Pres	Unc	Hahn LAH09280302 (CANY)	2003	Type locality is St. George, Washington Co., UT (Palmer s.n. NY)
Compositae (Asteraceae)	<i>Chrysothamnus viscidiflorus</i> var. <i>stenophyllus</i>	Included in var. <i>viscidiflorus</i> in Cronquist (1994)	slenderleaf rabbitbrush	Shrub	Wide	Pres	Com	Welsh, Moore & Olsen 3712 (CANY)	1964	
Compositae (Asteraceae)	<i>Chrysothamnus viscidiflorus</i> var. <i>viscidiflorus</i>		green rabbitbrush	Shrub	Wide	Rep	Unc	NCPN (in ed.)	2004	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Compositae (Asteraceae)	<i>Cirsium arvense</i>	Includes vars. <i>horridum</i> & <i>integrifolium</i> , <i>Breea arvensis</i>	Canada thistle	PerF	Intro	Rep	Rare	Dewey & Andersen (2005)	2004	Utah state noxious weed. Native to Eurasia
Compositae (Asteraceae)	<i>Cirsium calcaireum</i> var. <i>bipinnatum</i>	<i>C. arizonicum</i> var. <i>bipinnatum</i> . Var. not recognized in Cronquist (1994)	wingless thistle	PerF	RegEn	Pres	Unc	Moore 214 (BRY)	1964	
Compositae (Asteraceae)	<i>Cirsium calcaireum</i> var. <i>pulchellum</i>	Var. not recognized in Cronquist (1994), included in <i>C. arizonicum</i> var. <i>bipinnatum</i> in <i>Flora of North America</i> 2006)	pretty thistle	PerF	Wide	Pres	Unc	Belnap 256 (CANY)	1987	
Compositae (Asteraceae)	<i>Cirsium neomexicanum</i> var. <i>neomexicanum</i>	Vars. not recognized in <i>Flora of North America</i> (2006)	New Mexico thistle	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2867 (BRY)	1964	
Compositae (Asteraceae)	<i>Cirsium neomexicanum</i> var. <i>utahense</i>	<i>C. utahense</i> . Not recognized in <i>Flora of North America</i> (2006).	Utah thistle	PerF	RegEn	Pres	Unc	Welsh, Moore & Canter 2867 (CANY)	1964	Type locality is Silver Reef, Washington Co., UT (Jones 5163q GH)
Compositae (Asteraceae)	<i>Cirsium rothrockii</i>	<i>C. arizonicum</i> var. <i>rothrockii</i> . Not recognized for Utah in <i>Flora of North America</i> (2006)	Rothrock's thistle	PerF	RegEn	Pres	Rare	Chrobak 448 (CANY)	1985	
Compositae (Asteraceae)	<i>Cirsium rydbergii</i>		Rydberg's thistle	PerF	RegEn	Pres	Unc	Fowler & May 1539 (CANY)	1993	Type locality is along San Juan River near Bluff, San Juan Co., UT (Rydberg & Garrett 10001 NY). USFWS: 3C



**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Compositae (Asteraceae)	<i>Cirsium vulgare</i>		bull thistle	PerF	Intro	Rep	Rare	Dewey & Andersen (2005)	2004	Native to Europe
Compositae (Asteraceae)	<i>Conyza canadensis</i> var. <i>glabrata</i>	Vars. not recognized in <i>Flora of North America</i> (2006)	Canadian horseweed	AnnF	Wide	Pres	Unc	Welsh, Moore & Olsen 3708 (CANY)	1964	
Compositae (Asteraceae)	<i>Crepis runcinata</i> var. <i>glauca</i>		glaucous hawkbeard	PerF	Wide	Pres	Unc	Fleming 863 (CANY)	1964	
Compositae (Asteraceae)	<i>Dicoria brandegeei</i>	<i>D. canescens</i> ssp. <i>brandegei</i> , <i>D. canescens</i> ssp. <i>wetherillii</i> . Vars. not recognized in <i>Flora of North America</i> (2006)	Brandegee's sandplant	AnnF	RegEn	Pres	Unc	Rink 4605 (CANY)	2005	
Compositae (Asteraceae)	<i>Encelia frutescens</i> var. <i>resinosa</i>	<i>E. frutescens</i> var. <i>frutescens</i>	bush encelia	Shrub	Wide	Pres	Unc	Fleming 805 (CANY)	1989	
Compositae (Asteraceae)	<i>Enceliopsis nudicaulis</i> var. <i>nudicaulis</i>		nakedstem	PerF	Wide	Pres	Unc	Johnson 14 (CANY)	1979	Type locality is "Southern Utah" (Bishop s.n. GH)
Compositae (Asteraceae)	<i>Erigeron bellidiastrum</i>	<i>E. bellidiastrum</i> var. <i>bellidiastrum</i>	pretty daisy	AnnF	Wide	Pres	Unc	Schelz s.n. (CANY)	1983	
Compositae (Asteraceae)	<i>Erigeron divergens</i> var. <i>divergens</i>		spreading daisy	PerF	Wide	Pres	Com	Allen 220 (CANY)	1978	
Compositae (Asteraceae)	<i>Erigeron flagellaris</i>		trailing daisy	PerF	Wide	Pres	Rare	Anderson s.n. (BRY)	1983	
Compositae (Asteraceae)	<i>Erigeron pumilus</i> var. <i>concinus</i>	<i>E. concinnus</i> var. <i>concinus</i> , includes var. <i>subglaber</i>	Navajo fleabane	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2920 (CANY)	1964	
Compositae (Asteraceae)	<i>Erigeron utahensis</i> var. <i>sparsifolius</i>	<i>E. sparsifolius</i>	slenderleaf daisy	PerF	RegEn	Pres	Unc	Heil & Fleming 6099 (CANY)	1987	Type locality is Willow Creek, San Juan Co., UT (Eastwood 48 CAS)

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Compositae (Asteraceae)	<i>Erigeron utahensis</i> var. <i>utahensis</i>	<i>E. utahensis</i>	Utah daisy	PerF	RegEn	Pres	Unc	Belnap 117 (CANY)	1987	Type locality is Kanab, Kane Co., UT (Thompson s.n. GH)
Compositae (Asteraceae)	<i>Euthamia occidentalis</i>	<i>Solidago occidentalis</i>	western goldenrod	PerF	Wide	Pres	Unc	Belnap 344 (CANY)	1987	
Compositae (Asteraceae)	<i>Gaillardia pinnatifida</i>		Hopi blanketflower	PerF	Wide	Pres	Unc	Allen 212 (CANY)	1973	
Compositae (Asteraceae)	<i>Gaillardia spathulata</i>		basin blanketflower	PerF	RegEn	Pres	Unc	Chrobak 423 (CANY)	1972	Type locality is Rabbit Valley, Wayne Co., UT (Ward 401 GH)
Compositae (Asteraceae)	<i>Gnaphalium stramineum</i>	<i>G. chilense</i> , <i>Pseudognaphalium stramineum</i>	cottonbatting cudweed	AnnF	Wide	Pres	Rare	Schelz s.n. (CANY)	2002	
Compositae (Asteraceae)	<i>Grindelia fastigiata</i>	Included in <i>G. hirsutula</i> in <i>Flora of North America</i> (2006)	erect gumweed	PerF	RegEn	Pres	Unc	Heil & Fleming 6082 (CANY)	1990	
Compositae (Asteraceae)	<i>Grindelia squarrosa</i> var. <i>serrulata</i>	Vars. not recognized in <i>Flora of North America</i> (2006)	curly-cup gumweed	PerF	Wide	Pres	Unc	Welsh 22618 (CANY)	1983	
Compositae (Asteraceae)	<i>Gutierrezia microcephala</i>		thread snakeweed	Shrub	Wide	Pres	Unc	Welsh, Moore & Olsen 3693 (CANY)	1964	
Compositae (Asteraceae)	<i>Gutierrezia sarothrae</i>		broom snakeweed	Shrub	Wide	Pres	Com	Welsh & Moore 3836 (CANY)	1964	
Compositae (Asteraceae)	<i>Haplopappus armerioides</i> var. <i>armerioides</i>	<i>Stenotus armerioides</i> var. <i>armerioides</i>	thrift goldenweed	PerF	Wide	Pres	Unc	Heil, Porter, & Fleming 5926 (CANY)	1964	
Compositae (Asteraceae)	<i>Haplopappus rusbyi</i>	<i>H. drummondii</i> , <i>Isocoma rusbyi</i> , <i>I. drummondii</i>	Rusby's goldenbush	Shrub	Wide	Rep	?	Schelz et al. (2006)	NA	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Compositae (Asteraceae)	<i>Haplopappus scopulorum</i> var. <i>canonis</i>	Vars. not recognized in <i>Flora of North America</i> (2006).	canyon spindly goldenbush	Shrub	LocEn	Pres	Rare	Welsh 8813 (BRY)	1968	Type locality is Naturalist Cove, E of The Neck, Canyonlands NP, San Juan Co., UT (Welsh 8813 BRY)
Compositae (Asteraceae)	<i>Haplopappus scopulorum</i> var. <i>hirtellus</i>	<i>Hesperodoria scopulorum</i> , <i>Chrysothamnus scopulorum</i>	spindly goldenbush	Shrub	RegEn	Pres	Unc	Heil & Fleming 6188 (CANY)	1990	Type locality is Cedar Canyon, Iron Co., UT (Garrett 6051 US)
Compositae (Asteraceae)	<i>Helenium autumnale</i> var. <i>montanum</i>	Vars. not recognized in <i>Flora of North America</i> (2006).	fall sneezeweed	PerF	Wide	Pres	Unc	Chrobak 871 (CANY)	1985	
Compositae (Asteraceae)	<i>Helianthella microcephala</i>		purpldisk sunflower	PerF	RegEn	Pres	Rare	Topp ST092304004 (CANY)	2004	Type locality is Abajo Mtns, San Juan Co., UT (Newberry s.n. GH)
Compositae (Asteraceae)	<i>Helianthus annuus</i> ssp. <i>lenticularis</i>	Ssp. not recognized in <i>Flora of North America</i> (2006).	common sunflower	AnnF	Wide	Pres	Unc	Welsh 22481 (CANY)	1983	
Compositae (Asteraceae)	<i>Helianthus petiolaris</i> ssp. <i>fallax</i>	Includes var. <i>petiolaris</i>	prairie sunflower	AnnF	Wide	Pres	Com	Chrobak 444 (CANY)	1964	
Compositae (Asteraceae)	<i>Hymenopappus filifolius</i> var. <i>cinereus</i>	<i>H. filifolius</i> var. <i>lugens</i> , <i>H. filifolius</i> var. <i>pauciflorus</i> , <i>H. filifolius</i> var. <i>megacephalus</i> , <i>H. filifolius</i> var. <i>tomentosus</i>	common hyalineherb	PerF	Wide	Pres	Com	Debolt 224 (CANY)	1964	
Compositae (Asteraceae)	<i>Hymenoxys acaulis</i> var. <i>ivesiana</i>	<i>H. argentea</i> var. <i>ivesiana</i> , <i>Tetranneuris ivesiana</i>	Canyonlands hymenoxys	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2879 (CANY)	1964	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonymy/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Compositae (Asteraceae)	<i>Hymenoxys richardsonii</i> var. <i>floribunda</i>	<i>Picardenia richardsonii</i> var. <i>floribunda</i>	Colorado rubber-plant	PerF	Wide	Pres	Unc	Schelz s.n. (CANY)	1997	
Compositae (Asteraceae)	<i>Hymenoxys richardsonii</i> var. <i>richardsonii</i>	<i>Picardenia richardsonii</i> var. <i>richardsonii</i>	Colorado rubber-plant	PerF	Wide	Pres	Unc	Schelz s.n. (CANY)	2003	
Compositae (Asteraceae)	<i>Iva axillaris</i>	<i>I. axillaris</i> var. <i>axillaris</i> , Vars. not recognized in <i>Flora of North America</i> (2006).	poverty-weed	PerF	Wide	Pres	Unc	Topp ST092404001 (CANY)	1988	
Compositae (Asteraceae)	<i>Lactuca serriola</i>		prickly lettuce	AnnF	Intro	Pres	Unc	Fertig 23011 (CANY)	2006	Native to Europe
Compositae (Asteraceae)	<i>Lactuca tatarica</i> var. <i>pulchella</i>	<i>L. pulchella</i> , <i>L. oblongifolia</i> , <i>Mulgedium pulchellum</i>	blue lettuce	PerF	Wide	Pres	Unc	Belnap 138 (CANY)	1987	
Compositae (Asteraceae)	<i>Lygodesmia grandiflora</i> var. <i>grandiflora</i>	<i>L. grandiflora</i>	showy rush-pink	PerF	Wide	Pres	Unc	Johnson 61 (CANY)	1979	
Compositae (Asteraceae)	<i>Machaeranthera canescens</i> var. <i>aristata</i>	<i>M. linearis</i> , <i>M. rigida</i> , <i>M. canescens</i> var. <i>vacans</i> , <i>Dieteria canescens</i> var. <i>aristata</i>	aristate aster	PerF	RegEn	Pres	Unc	Welsh, Moore & Olsen 3680 (CANY)	1964	Type locality is Willow Creek, San Juan Co., UT (Eastwood 45 CAS)
Compositae (Asteraceae)	<i>Machaeranthera canescens</i> var. <i>canescens</i>	<i>Aster canescens</i>	hoary aster	PerF	Wide	Rep	?	Schelz et al. (2006)	NA	
Compositae (Asteraceae)	<i>Machaeranthera grindeloides</i> var. <i>grindeloides</i>	<i>Haplopappus nuttallii</i> , <i>Xanthisma grindeloides</i> var. <i>grindeloides</i>	gumweed aster	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2900 (CANY)	1964	
Compositae (Asteraceae)	<i>Machaeranthera tanacetifolia</i>		tansyleaf aster	AnnF	Wide	Pres	Unc	Belnap 363 (CANY)	1987	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Compositae (Asteraceae)	<i>Malacothrix glabrata</i>	<i>Malacothrix californica</i> var. <i>glabrata</i>	filiform desert-dandelion	AnnF	Wide	Pres	Rare	Schelz s.n. (CANY)	2001	
Compositae (Asteraceae)	<i>Malacothrix sonchoides</i>		sowthistle desert-dandelion	AnnF	Wide	Pres	Unc	Belnap 37 (CANY)	1964	
Compositae (Asteraceae)	<i>Oxytenia acerosa</i>	<i>Iva acerosa</i>	copperweed	Shrub	Wide	Pres	Unc	Welsh & Moore 3850 (CANY)	1964	
Compositae (Asteraceae)	<i>Petrorhiza pumila</i> var. <i>pumila</i>	<i>Solidago petrorhiza</i>	rock-goldenrod	PerF	Wide	Pres	Unc	Welsh, Moore & Olsen 3728 (CANY)	1964	
Compositae (Asteraceae)	<i>Platyschkuhria integrifolia</i> var. <i>desertorum</i>	<i>Bahia nudicaulis</i> var. <i>desertorum</i>	desert bahia	PerF	RegEn	Pres	Unc	Belnap 373 (CANY)	1986	Type locality is Cisco, Grand Co., UT (Jones s.n. US)
Compositae (Asteraceae)	<i>Pluchea sericea</i>	<i>Tessaria sericea</i>	arrowweed	Shrub	Wide	Pres	Unc	Heil & Fleming 6074 (CANY)	1990	
Compositae (Asteraceae)	<i>Prenanthes exigua</i>	<i>Lygodesmia exigua</i>	prenanthella	AnnF	Wide	Pres	Rare	Belnap 129 (CANY)	1987	
Compositae (Asteraceae)	<i>Ratibida columnifera</i>		prairie coneflower	PerF	Sparse	Pres	Unc	Fertig 23014 (CANY)	2006	
Compositae (Asteraceae)	<i>Senecio douglasii</i> var. <i>longilobus</i>	<i>S. longilobus</i> , <i>S. flaccidus</i> var. <i>douglasii</i>	Douglas' groundsel	PerF	Wide	Rep	?	Schelz et al. (2006)	NA	
Compositae (Asteraceae)	<i>Senecio multilobatus</i>	<i>Packera multilobata</i>	basin groundsel	PerF	Wide	Pres	Com	Welsh, Moore & Canter 2853 (CANY)	1964	
Compositae (Asteraceae)	<i>Senecio spartioides</i> var. <i>multicapitatus</i>	<i>S. multicapitatus</i> . Vars. not recognized in <i>Flora of North America</i> (2006)	many-headed groundsel	PerF	Wide	Pres	Unc	Boschen 22-84 (CANY)	1984	
Compositae (Asteraceae)	<i>Senecio spartioides</i> var. <i>spartioides</i>	<i>S. spartioides</i> . Vars. not recognized in <i>Flora of North America</i> (2006)	broom groundsel	PerF	Wide	Pres	Unc	Welsh & Moore 3678 (CANY)	1964	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Compositae (Asteraceae)	<i>Solidago canadensis</i> var. <i>salebrosa</i>	<i>S. lepida</i> var. <i>salebrosa</i> , <i>S. altissima</i>	Canadian goldenrod	PerF	Wide	Pres	Unc	Topp ST090504001 (CANY)	2004	
Compositae (Asteraceae)	<i>Solidago velutina</i>	<i>S. sparsiflora</i> , <i>S. velutina</i> var. <i>sparsiflora</i>	three-nerve goldenrod	PerF	Wide	Pres	Com	Welsh & Moore 3845 (CANY)	1964	
Compositae (Asteraceae)	<i>Sonchus asper</i>		spiny-leaf sow-thistle	AnnF	Intro	Pres	Unc	Heil, Porter, & Fleming 5908 (CANY)	1990	Native to Europe
Compositae (Asteraceae)	<i>Stephanomeria exigua</i>		white-plume wire-lettuce	AnnF	Wide	Pres	Com	Welsh, Moore & Olsen 3709 (CANY)	1964	
Compositae (Asteraceae)	<i>Stephanomeria pauciflora</i>		brown-plume wire-lettuce	PerF	Wide	Pres	Unc	Boschen 31017 (CANY)	1984	
Compositae (Asteraceae)	<i>Stephanomeria tenuifolia</i> var. <i>tenuifolia</i>	<i>S. minor</i> var. <i>minor</i>	slender wirelettuce	PerF	Wide	Pres	Unc	Welsh, Moore & Olsen 3724 (CANY)	1964	
Compositae (Asteraceae)	<i>Syntrichopappus fremontii</i>		Fremont's syntrichopappus	AnnF	Periph	Pres	Rare	Belnap 379 (BRY)	1987	
Compositae (Asteraceae)	<i>Taraxacum officinale</i>		common dandelion	PerF	Intro	Pres	Unc	Belnap 112 (CANY)	1987	Native to Eurasia
Compositae (Asteraceae)	<i>Tetradymia canescens</i>		spineless horsebrush	Shrub	Wide	Rep	?	Schelz et al. (2006)	NA	
Compositae (Asteraceae)	<i>Thelesperma megapotamicum</i>		Hopi-tea	PerF	Periph	Pres	Rare	Schelz s.n. (CANY)	2003	
Compositae (Asteraceae)	<i>Thelesperma subnudum</i> var. <i>subnudum</i>	Vars. not recognized in <i>Flora of North America</i> (2006).	scapose greenthread	PerF	Wide	Pres	Unc	Welsh & Chatterley 21867 (CANY)	1973	Type locality is "Southern Utah" (Parry 109 GH)
Compositae (Asteraceae)	<i>Thymophylla pentachaeta</i> var. <i>belenidium</i>	<i>Dyssodia pentachaeta</i> var. <i>belenidium</i>	scale glandweed	PerF	Wide	Pres	Unc	Heil, Porter, & Fleming 6103 (CANY)	1990	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Compositae (Asteraceae)	<i>Townsendia annua</i>		annual townsendia	AnnF	Wide	Pres	Unc	Debolt 220 (CANY)	1982	Type locality is Cottonwood Wash, 1 ½ miles N of Bluff, San Juan Co., UT (Maguire 13509 GH)
Compositae (Asteraceae)	<i>Townsendia incana</i>		hoary townsendia	PerF	Wide	Pres	Unc	Heil, Porter, & Fleming 5936 (CANY)	1978	
Compositae (Asteraceae)	<i>Tragopogon dubius</i>	<i>T. dubius</i> var. <i>major</i>	yellow salsify	PerF	Intro	Pres	Unc	Chrobak 460 (CANY)	1985	Native to Europe
Compositae (Asteraceae)	<i>Vancevea stylosa</i>	<i>Chrysothamnus stylosa</i>	resinbush	Shrub	RegEn	Pres	Unc	Chrobak 446 (CANY)	1985	Type locality is near Epsom Creek [between Bluff and Mexican Hat], San Juan Co., UT (Eastwood 36 CAS)
Compositae (Asteraceae)	<i>Verbesina encelioides</i> var. <i>exauriculata</i>	<i>Ximenesia encelioides</i>	golden crownbeard	AnnF	Wide	Pres	Unc	Chrobak-Cox s.n. (CANY)	1988	
Compositae (Asteraceae)	<i>Xanthium strumarium</i> var. <i>canadense</i>	<i>X. pensylvanicum</i> , <i>X. saccharatum</i> , Vars. not recognized in <i>Flora of North America</i> (2006).	rough cocklebur	AnnF	Wide	Pres	Unc	Welsh, Moore & Olsen 3698 (CANY)	1964	
Compositae (Asteraceae)	<i>Xylorhiza glabriuscula</i> var. <i>linearifolia</i>	<i>Machaeranthera linearifolia</i> , <i>Xylorhiza linearifolia</i>	Moab woodyaster	PerF	LocEn	Pres	Unc	Belnap 166 (CANY)	1987	Type locality is 6 miles NW of Moab, Grand Co., UT (Watson 679 TEX)

Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.

Family	Species name	Synonymy/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Compositae (Asteraceae)	<i>Xylorhiza tortifolia</i> var. <i>imberbis</i>	<i>Machaeranthera tortifolia</i> var. <i>imberbis</i>	hurtleaf woodyaster	PerF	RegEn	Pres	Unc	Welsh, Moore & Canter 2949 (CANY)	1964	Type locality is E bank of Green River W of Moab (Cronquist 8994 NY)
Compositae (Asteraceae)	<i>Xylorhiza venusta</i>	<i>Machaeranthera venusta</i>	Cisco woodyaster	PerF	RegEn	Pres	Rare	Topp ST042504001 (CANY)	2004	Type locality is Cisco, Grand Co., UT (Jones s.n. POM)
Convolvulaceae	<i>Convolvulus arvensis</i>		field bindweed	PerF	Intro	Pres	Unc	Chrobak 463 (CANY)	1985	Utah state noxious weed. Native to Eurasia
Cornaceae	<i>Cornus sericea</i> var. <i>sericea</i>	<i>C. stolonifera</i> , <i>Swida sericea</i>	red-osier dogwood	Shrub	Wide	Pres	Unc	Belnap 112 (CANY)	1983	
Crossosomataceae (Celastraceae)	<i>Glossopetalon spinescens</i> var. <i>meionandrum</i>	<i>Forsellisia meionandra</i>	spiny greasebush	Shrub	RegEn	Pres	Unc	Welsh, Moore & Canter 2924 (CANY)	1964	
Cruciferae (Brassicaceae)	<i>Arabis holboellii</i> var. <i>pinetorum</i>	<i>Boecheria holboellii</i> var. <i>pinetorum</i> . Name may be misapplied, according to Holmgren et al. (2005).	Holboell's rockcress	PerF	Wide	Pres	Unc	Belnap 45 (BRY)	1987	
Cruciferae (Brassicaceae)	<i>Arabis perennans</i> var. <i>perennans</i>	<i>Boecheria perennans</i>	perennial rockcress	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2903 (CANY)	1964	
Cruciferae (Brassicaceae)	<i>Arabis pulchra</i> var. <i>pallens</i>	<i>Boecheria pulchra</i> var. <i>pallens</i>	desert rockcress	PerF	Wide	Pres	Unc	Allen 133 (CANY)	1965	Type locality is Westwater, Grand Co., UT (Jones s.n. US)
Cruciferae (Brassicaceae)	<i>Arabis selbyi</i>	<i>Boecheria selbyi</i> var. <i>selbyi</i>	Selby's rockcress	PerF	Wide	Pres	Unc	Belnap 43 (CANY)	1979	
Cruciferae (Brassicaceae)	<i>Chorispora tenella</i>		blue mustard	AnnF	Intro	Pres	Unc	Chrobak-Cox s.n. (CANY)	1989	Native to Asia



**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Cruciferae (Brassicaceae)	<i>Conringia orientalis</i>		hare's-ear mustard	AnnF	Intro	Rep	?	Schelz et al. (2006)	NA	Native to Europe
Cruciferae (Brassicaceae)	<i>Descurainia pinnata</i> var. <i>intermedia</i>	Included in <i>D. pinnata</i> var. <i>osmiarum</i> by some authors	western tansy-mustard	AnnF	Wide	Pres	Unc	Schelz s.n. (CANY)	1996	
Cruciferae (Brassicaceae)	<i>Descurainia pinnata</i> var. <i>osmiarum</i>	<i>D. pinnata</i> ssp. <i>halictorum</i>	western tansy-mustard	AnnF	Wide	Pres	Unc	Belnap 42 (CANY)	1967	
Cruciferae (Brassicaceae)	<i>Descurainia sophia</i>		flixweed	AnnF	Intro	Pres	Unc	Belnap 509 (CANY)	1987	Native to Europe
Cruciferae (Brassicaceae)	<i>Dithyrea wislizenii</i>	<i>Dimorphocarpa wislizenii</i>	spectacle-pod	AnnF	Wide	Pres	Unc	Debolt 169 (CANY)	1964	
Cruciferae (Brassicaceae)	<i>Draba cuneifolia</i> var. <i>cuneifolia</i>		wedgeleaf draba	AnnF	Wide	Pres	Unc	Welsh 8838 (BRY)	1969	
Cruciferae (Brassicaceae)	<i>Erysimum asperum</i> var. <i>purshii</i>	<i>E. asperum</i> var. <i>asperum</i> , <i>E. capitatum</i> var. <i>purshii</i> . Included in var. <i>capitatum</i> in Holmgren et al. (2005)	sand dune wallflower	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2904 (CANY)	1964	
Cruciferae (Brassicaceae)	<i>Lepidium alyssoides</i> var. <i>eastwoodiae</i>	<i>L. montanum</i> var. <i>spatulatum</i> , <i>L. eastwoodiae</i>	Eastwood's tall pepperwort	PerF	RegEn	Pres	Unc	Welsh, Moore & Olsen 3687 (CANY)	1964	
Cruciferae (Brassicaceae)	<i>Lepidium densiflorum</i> var. <i>ramosum</i>	Includes var. <i>macrocarpum</i>	prairie pepperwort	AnnF	Wide	Pres	Unc	Chrobak 870 (CANY)	1967	
Cruciferae (Brassicaceae)	<i>Lepidium lasiocarpum</i> var. <i>georginum</i>		St. George pepperwort	AnnF	Wide	Pres	Unc	Welsh 8840 (BRY)	1969	Type locality is valley of the Virgin near St. George, Washington Co., UT (Parry 19 NY)
Cruciferae (Brassicaceae)	<i>Lepidium latifolium</i>	<i>Cardaria latifolia</i>	broad-leaf pepperwort	PerF	Intro	Pres	Unc	Chrobak 844 (CANY)	1985	Utah state noxious weed. Native to Eurasia

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Cruciferae (Brassicaceae)	<i>Lepidium montanum</i> var. <i>jonesii</i>		Jones' pepperwort	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2847 (CANY)	1964	Type locality is St. George, Washington Co., UT (Jones 1636 NY)
Cruciferae (Brassicaceae)	<i>Malcolmia africana</i>		African mustard	AnnF	Intro	Pres	Unc	Allen 128 (CANY)	1978	Native to Africa
Cruciferae (Brassicaceae)	<i>Physaria acutifolia</i> var. <i>acutifolia</i>	<i>P. australis</i>	sharp-leaf twinpod	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2898 (CANY)	1964	
Cruciferae (Brassicaceae)	<i>Physaria ludoviciana</i>	<i>Lesquerella ludoviciana</i>	silver bladderpod	PerF	Wide	Rep	NA	Schelz et al. (2006)	NA	
Cruciferae (Brassicaceae)	<i>Physaria newberryi</i>	<i>P. newberryi</i> var. <i>racemosa</i>	Newberry's twinpod	PerF	RegEn	Pres	Unc	Thorne & Thorne s.n. (BRY)	1969	
Cruciferae (Brassicaceae)	<i>Physaria rectipes</i>	<i>Lesquerella rectipes</i>	Colorado Plateau bladderpod	PerF	RegEn	Pres	Unc	Heil, Porter, & Fleming 5984 (CANY)	1964	
Cruciferae (Brassicaceae)	<i>Sisymbrium altissimum</i>		tumble mustard	AnnF	Intro	Pres	Unc	Allen 127 (CANY)	1978	Native to Europe
Cruciferae (Brassicaceae)	<i>Stanleya pinnata</i>	<i>S. pinnata</i> var. <i>pinnata</i>	prince's-plume	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2878 (CANY)	1964	
Cruciferae (Brassicaceae)	<i>Streptanthella longirostris</i>		long-beak fiddle-mustard	AnnF	Wide	Pres	Com	Belnap 506 (CANY)	1979	
Cruciferae (Brassicaceae)	<i>Streptanthus cordatus</i>	<i>S. cordatus</i> var. <i>cordatus</i>	heart-leaf jewelflower	PerF	Wide	Pres	Unc	Johnson 20 (CANY)	1979	
Cruciferae (Brassicaceae)	<i>Thelypodopsis divaricata</i>		candelabra thelypod	PerF	RegEn	Pres	Unc	Belnap 501 (CANY)	1979	Type locality is 10 miles E of Hite, San Juan Co., UT (Cronquist 9033 GH)
Cruciferae (Brassicaceae)	<i>Thelypodium integrifolium</i> var. <i>gracilipes</i>		Moab thelypod	PerF	RegEn	Pres	Unc	Welsh, Moore & Olsen 3771 (CANY)	1964	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Cucurbitaceae	<i>Cucurbita foetidissima</i>		buffalo gourd	PerF	Wide	Pres	Rare	Heil, Porter, & Fleming 7020 (CANY)	1991	
Cupressaceae	<i>Juniperus osteosperma</i>	<i>Sabina osteosperma</i>	Utah juniper	Shrub	Wide	Pres	Abun	Welsh, Moore & Canter 2873 (CANY)	1964	
Cyperaceae	<i>Carex aurea</i>	<i>C. garberi</i>	golden sedge	PerG	Wide	Pres	Com	Heil, Porter, & Fleming 5903 (CANY)	1987	
Cyperaceae	<i>Carex nebrascensis</i>		Nebraska sedge	PerG	Wide	Pres	Unc	Belnap 114 (CANY)	1987	
Cyperaceae	<i>Carex parryana</i>	<i>C. parryana</i> var. <i>parryana</i>	Parry's sedge	PerG	Wide	Pres	Unc	Welsh, Moore & Canter 2998 (CANY)	1964	Includes specimens previously determined as <i>C. specuicola</i>
Cyperaceae	<i>Carex peltita</i>	<i>C. lanuginosa</i>	woolly sedge	PerG	Wide	Pres	Rare	Welsh, Moore & Canter 2983 (CANY)	1964	
Cyperaceae	<i>Carex praegracilis</i>		blackcreeper sedge	PerG	Wide	Pres	Rare	Welsh, Moore & Canter 2985 (CANY)	1964	
Cyperaceae	<i>Carex rossii</i>	<i>C. deflexa</i> var. <i>boottii</i> , <i>C. brevipes</i> , <i>C. pityophila</i>	Ross' sedge	PerG	Wide	Pres	Rare	Welsh, Moore & Olsen 3727 (BRY)	1964	
Cyperaceae	<i>Cyperus acuminatus</i>		taper-tip flat-sedge	AnnG	Periph	Pres	Rare	Welsh 22477 (CANY)	1983	
Cyperaceae	<i>Cyperus erythrorhizos</i>		redroot flat-sedge	AnnG	Wide	Pres	Rare	Rink 4598 (CANY)	2005	
Cyperaceae	<i>Eleocharis palustris</i>	Includes <i>E. macrostachya</i> , <i>E. erythropoda</i> , & <i>E. uniglumis</i>	common spikerush	PerG	Wide	Pres	Unc	Belnap 283 (CANY)	1964	
Cyperaceae	<i>Eleocharis rostellata</i>		beaked spikerush	PerG	Wide	Pres	Unc	Welsh 5384 (CANY)	1966	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Cyperaceae	<i>Scirpus acutus</i>	<i>Schoenoplectus acutus</i> var. <i>occidentalis</i> , <i>Schoenoplectus acutus</i> var. <i>acutus</i> , <i>Schoenoplectus lacustris</i> ssp. <i>acutus</i>	hardstem bulrush	PerG	Wide	Pres	Unc	Welsh, Moore & Canter 3773A (CANY)	1964	
Cyperaceae	<i>Scirpus pungens</i> var. <i>longispicatus</i>	<i>Scirpus pungens</i> var. <i>polyphyllus</i> , <i>Schoenoplectus pungens</i> var. <i>longispicatus</i> , <i>Schoenoplectus pungens</i> var. <i>polyphyllus</i>	three-square bulrush	PerG	Wide	Pres	Unc	Heil, Porter, & Fleming 5891 (CANY)	1964	
Cyperaceae	<i>Scirpus validus</i>	<i>Schoenoplectus tabernaemontani</i> , <i>Schoenoplectus lacustris</i> ssp. <i>validus</i>	soft-stem bulrush	PerG	Wide	Rep	1989	Schelz et al. (2006)	NA	
Elaeagnaceae	<i>Elaeagnus angustifolia</i>		Russian-olive	Tree	Intro	Pres	Unc	Welsh, Moore & Canter 2997 (CANY)	1964	Native to Europe
Elaeagnaceae	<i>Shepherdia rotundifolia</i>		roundleaf buffaloberry	Shrub	RegEn	Pres	Unc	Thorne, Thomas, & Inskip 5158 (CANY)	1987	Type locality is upper valley of the Virgin, Kane Co., UT (Siler s.n. ISC)
Ephedraceae	<i>Ephedra torreyana</i>		Torrey's ephedra	Shrub	Wide	Pres	Unc	Welsh & Chatterley 21875 (CANY)	1968	
Ephedraceae	<i>Ephedra viridis</i> var. <i>viridis</i>	<i>E. viridis</i>	green ephedra	Shrub	Wide	Pres	Com	Belnap 387 (CANY)	1964	
Ephedraceae	<i>Ephedra viridis</i> var. <i>viscida</i>	<i>E. cutleri</i>	Cutler's ephedra	Shrub	RegEn	Pres	Unc	Welsh, Moore & Canter 2923 (BRY)	1964	

*Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.*

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Equisetaceae	<i>Equisetum arvense</i>		field horsetail	Fern	Wide	Pres	Unc	Welsh, Moore, & Canter 2993 (CANY)	1964	
Equisetaceae	<i>Equisetum hyemale</i> var. <i>affine</i>	<i>Hippochaete hyemalis</i> ssp. <i>affinis</i> , <i>E. praealtum</i>	tall scouring-rush	Fern	Wide	Pres	Unc	Topp ST081604001 (CANY)	1987	
Equisetaceae	<i>Equisetum laevigatum</i>	<i>Hippochaete laevigata</i> , <i>E. kansanum</i>	smooth scouring-rush	Fern	Wide	Pres	Unc	Welsh, Moore & Canter 2987 (CANY)	1964	Some CANY material (Schelz s.n., 1997) may exhibit hybridization with <i>E. hyemale</i> .
Euphorbiaceae	<i>Chamaesyce fendleri</i>	<i>Euphorbia fendleri</i>	Fendler's spurge	PerF	Wide	Pres	Unc	Heil, Porter, & Fleming 5994 (CANY)	1978	
Euphorbiaceae	<i>Chamaesyce glyptosperma</i>	<i>Euphorbia glyptosperma</i>	ridge-seeded spurge	AnnF	Wide	Pres	Unc	Welsh 22503 (CANY)	1983	
Euphorbiaceae	<i>Chamaesyce parryi</i>	<i>Euphorbia parryi</i>	Parry's spurge	AnnF	Wide	Pres	Unc	Heil & Fleming 6075 (CANY)	1964	
Euphorbiaceae	<i>Euphorbia brachycera</i>	<i>E. robusta</i> , <i>E. brachycera</i> var. <i>robusta</i> , <i>Tithymalus brachyceras</i>	shorthorn spurge	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2962 (CANY)	1964	
Fagaceae	<i>Quercus gambelii</i> var. <i>gambelii</i>	<i>Q. gambelii</i>	Gambel's oak	Tree	Wide	Pres	Com	Welsh, Moore & Canter 2957 (CANY)	1964	
Fagaceae	<i>Quercus turbinella</i>		turbinella live-oak	Shrub	Wide	Rep	?	Schelz et al. (2006)	NA	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Fagaceae	<i>Quercus welshii</i>	<i>Q. havardii</i> var. <i>tuckeri</i> , <i>Q. undulata</i>	shinnery oak	Shrub	RegEn	Pres	Unc	Welsh, Moore & Canter 2907 (CANY)	1964	Type locality of <i>Q. havardii</i> var. <i>tuckeri</i> is Low Pass E of Kens Lake, San Juan Co., UT (Welsh & Higgins 23630 BRY)
Fumariaceae	<i>Corydalis aurea</i> var. <i>occidentalis</i>	<i>C. curvisiliqua</i> ssp. <i>occidentalis</i>	golden corydalis	PerF	Wide	Pres	Unc	Allen 205 (CANY)	1964	
Gentianaceae	<i>Gentiana affinis</i> var. <i>affinis</i>	<i>Pneumonanthe affinis</i>	Rocky Mountain gentian	PerF	Wide	Pres	Unc	Graham 1 (CANY)	1987	
Gentianaceae	<i>Swertia radiata</i>	<i>Frasera speciosa</i>	elkweed	PerF	Wide	Rep	Rare	Moran s.n. (CANY)	2007	
Gentianaceae	<i>Swertia utahensis</i>	<i>Frasera paniculata</i>	Utah swertia	PerF	RegEn	Pres	Unc	Chrobak 485 (CANY)	1985	Type locality is Buckskin Mtns, Kaibab Plateau "on the S edge of Utah", Kane Co., UT (Jones s.n. POM)
Geraniaceae	<i>Erodium cicutarium</i>		stork's-bill	AnnF	Intro	Pres	Unc	Welsh, Moore & Canter 2972 (CANY)	1964	Native to Europe
Gramineae (Poaceae)	<i>Agropyron cristatum</i>	<i>A. cristatum</i> var. <i>cristatum</i> , <i>A. cristatum</i> ssp. <i>pectinatum</i> , <i>A. pectinatum</i> , <i>A. sibiricum</i> , <i>A. desertorum</i>	crested wheatgrass	PerG	Intro	Pres	Unc	Boschen 23-84 (CANY)	1978	Native to Eurasia.
Gramineae (Poaceae)	<i>Agrostis stolonifera</i>	<i>A. alba</i> , <i>A. gigantea</i>	redtop	PerG	Intro	Pres	Rare	Hahn LAH09140305 (CANY)	2003	Native to Eurasia and Africa
Gramineae (Poaceae)	<i>Andropogon gerardii</i> var. <i>chrysocomus</i>	<i>A. hallii</i>	Hall's bluestem	PerG	Wide	Pres	Unc	Welsh, Moore & Olsen 3783 (BRY)	1964	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Gramineae (Poaceae)	<i>Andropogon gerardii</i> var. <i>gerardii</i>	<i>A. gerardii</i>	big bluestem	PerG	Wide	Pres	Unc	Welsh 22605 (CANY)	1983	
Gramineae (Poaceae)	<i>Andropogon glomeratus</i> var. <i>scabriglumis</i>		bushy bluestem	PerG	Periph	Rep	?	Schelz et al. (2006)	NA	
Gramineae (Poaceae)	<i>Aristida purpurea</i>	<i>A. glauca</i> , <i>A. fendleriana</i> , includes vars. <i>fendleriana</i> & <i>longisetata</i>	purple three-awn	PerG	Wide	Pres	Unc	Welsh, Moore & Olsen 3780 (CANY)	1964	
Gramineae (Poaceae)	<i>Avena fatua</i> var. <i>sativa</i>	<i>A. sativa</i>	oats	AnnG	Intro	Pres	Unc	Welsh, Atwood & Moore 10885 (BRY)	1970	Native to Eurasia
Gramineae (Poaceae)	<i>Bothriochloa barbinodis</i>		cane bluestem	PerG	Wide	Pres	Unc	Welsh 22620 (CANY)	1983	
Gramineae (Poaceae)	<i>Bothriochloa laguroides</i> var. <i>torreyana</i>		silver bluestem	PerG	Periph	Rep	?	Schelz et al. (2006)	NA	
Gramineae (Poaceae)	<i>Bouteloua barbata</i>	<i>Chondrosum barbatum</i> . Includes vars. <i>barbata</i> & <i>rothrockii</i>	sixweeks grama	AnnG	Wide	Pres	Unc	Johnson 74 (CANY)	1977	
Gramineae (Poaceae)	<i>Bouteloua curtipendula</i>	Includes vars. <i>curtipendula</i> & <i>caespitosa</i>	sideoats grama	PerG	Wide	Pres	Unc	Welsh, Moore & Olsen 3775 (CANY)	1964	
Gramineae (Poaceae)	<i>Bouteloua gracilis</i>	<i>Chondrosum gracile</i>	blue grama	PerG	Wide	Pres	Unc	Welsh & Moore 3833 (CANY)	1964	
Gramineae (Poaceae)	<i>Bromus diandrus</i>	<i>Anisantha diandra</i> , <i>B. rigidus</i>	ripgut brome	AnnG	Intro	Pres	Rare	Moran s.n. (CANY)	2007	Native to Eurasia
Gramineae (Poaceae)	<i>Bromus inermis</i> var. <i>inermis</i>	<i>Bromopsis inermis</i>	smooth brome	PerG	Intro	Pres	Unc	Hahn LAH09140308 (CANY)	2003	Native to Eurasia
Gramineae (Poaceae)	<i>Bromus japonicus</i>	<i>B. arvensis</i> . Includes <i>B. commutatus</i>	Japanese chess	AnnG	Intro	Pres	Unc	Heil & Fleming 6095 (CANY)	1990	Native to Eurasia

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Gramineae (Poaceae)	<i>Bromus rubens</i>		red brome	AnnG	Intro	Pres	Unc	Schelz 2154 (CANY)	2003	Native to Eurasia
Gramineae (Poaceae)	<i>Bromus tectorum</i>	<i>Anisantha tectorum</i>	cheatgrass	AnnG	Intro	Pres	Abun	Belnap 30 (CANY)	1967	Native to Eurasia
Gramineae (Poaceae)	<i>Calamagrostis scopulorum</i>		Jones' reedgrass	PerG	Wide	Pres	Unc	Welsh, Moore & Olsen 3759 (CANY)	1964	Type locality is Springdale, Washington Co., UT (Jones 6075 POM)
Gramineae (Poaceae)	<i>Distichlis spicata</i>	<i>D. spicata</i> var. <i>stricta</i> , <i>D. stricta</i>	desert saltgrass	PerG	Wide	Pres	Unc	Welsh, Moore & Canter 2989 (CANY)	1964	
Gramineae (Poaceae)	<i>Echinochloa crus-galli</i>	Welsh et al. (2003) include <i>E. microstachya</i>	barnyard-grass	AnnG	Intro	Pres	Unc	Boschen 7-84 (CANY)	1984	Native to Eurasia.
Gramineae (Poaceae)	<i>Elymus canadensis</i>	<i>E. canadensis</i> var. <i>canadensis</i>	Canada wildrye	PerG	Wide	Pres	Unc	Heil & Fleming 6094 (CANY)	1987	
Gramineae (Poaceae)	<i>Elymus elongatus</i>	<i>E. elongatus</i> var. <i>ponticus</i> , <i>Agropyron elongatum</i> , <i>Thinopyrum ponticum</i>	tall wheatgrass	PerG	Intro	Rep	?	Schelz et al. (2006)	NA	Native to Eurasia
Gramineae (Poaceae)	<i>Elymus elymoides</i>	<i>E. elymoides</i> var. <i>elymoides</i> , <i>Sitanion hystrix</i>	squirreltail	PerG	Wide	Pres	Unc	Heil, Porter, & Fleming 6006 (CANY)	1964	
Gramineae (Poaceae)	<i>Elymus hispidus</i>	<i>E. hispidus</i> var. <i>hispidus</i> , <i>Agropyron intermedium</i> , <i>Elytrigia intermedia</i> , <i>Thinopyrum intermedium</i>	intermediate wheatgrass	PerG	Intro	Rep	?	Schelz et al. (2006)	NA	Native to Eurasia



Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Gramineae (Poaceae)	<i>Elymus lanceolatus</i>	<i>E. lanceolatus</i> var. <i>lanceolatus</i> , <i>Agropyron</i> <i>dasytachyum</i> var. <i>dasytachyum</i> , includes var. <i>riparium</i> , A. <i>albicans</i> var. <i>albicans</i> , A. <i>albicans</i> var. <i>griffithsii</i>	thickspike wheatgrass	PerG	Wide	Pres	Unc	Welsh, Moore & Olsen 3718 (CANY)	1964	
Gramineae (Poaceae)	<i>Elymus salinus</i>	<i>E. salina</i> , <i>Leymus salinus</i> , <i>L. salina</i> , L. <i>ambiguus</i>	Salina wildrye	PerG	Wide	Pres	Unc	Topp ST092304003 (CANY)	2004	Type locality is top of Salina Pass, Sevier Co., UT (Jones 5447 POM)
Gramineae (Poaceae)	<i>Elymus smithii</i>	<i>Agropyron smithii</i> , <i>Pascopyrum</i> <i>smithii</i> , includes vars. <i>smithii</i> & <i>palmeri</i>	western wheatgrass	PerG	Wide	Pres	Unc	Welsh, Moore & Canter 3005 (CANY)	1964	
Gramineae (Poaceae)	<i>Elymus trachycaulus</i>	<i>E. trachycaulus</i> var. <i>trachycaulus</i> , <i>E. alaskanus</i> ssp. <i>latiglumis</i> , <i>Agropyron</i> <i>caninum</i> , A. <i>subsecundum</i> , A. <i>trachycaulum</i> , A. <i>latiglume</i>	slender wheatgrass	PerG	Wide	Pres	Unc	Belnap 404 (CANY)	1987	
Gramineae (Poaceae)	<i>Elymus virginicus</i>		Virginia wildrye	PerG	Periph	Pres	Unc	Welsh, Moore & Olsen 3717 (CANY)	1964	
Gramineae (Poaceae)	<i>Enneapogon desvauxii</i>		spike pappusgrass	PerG	Sparse	Pres	Rare	Miller s.n. (CANY)	1997	
Gramineae (Poaceae)	<i>Eremopyrum triticeum</i>	<i>Agropyron triticeum</i>	annual wheatgrass	AnnG	Intro	Pres	Unc	Moran s.n. (CANY)	2007	Native to Asia

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Gramineae (Poaceae)	<i>Erioneuron pilosum</i>		hairy tridens	PerG	Wide	Pres	Unc	Welsh, Moore & Canter 2833 (CANY)	1964	
Gramineae (Poaceae)	<i>Erioneuron pulchellum</i>	<i>Dasyochloa pulchella</i>	fluffgrass	PerG	Wide	Pres	Unc	Topp ST050804001 (CANY)	2004	
Gramineae (Poaceae)	<i>Festuca arundinacea</i>	<i>Lolium arundinaceum</i> , <i>Schedonorus phoenix</i> , <i>S. arundinaceus</i>	tall fescue	PerG	Intro	Pres	Unc	Topp ST070504002 (CANY)	2004	Native to Europe
Gramineae (Poaceae)	<i>Festuca octoflora</i>	Includes vars. <i>glauca</i> , <i>hirtella</i> , & <i>octoflora</i> , <i>Vulpia octoflora</i>	six-weeks fescue	AnnG	Wide	Pres	Unc	Welsh 21818 (CANY)	1967	
Gramineae (Poaceae)	<i>Hilaria jamesii</i>	<i>Pleuraphis jamesii</i>	galleta	PerG	Wide	Pres	Com	Welsh, Moore & Canter 2839 (CANY)	1964	
Gramineae (Poaceae)	<i>Hordeum jubatum</i>	<i>Critesion jubatum</i>	foxtail barley	PerG	Wide	Rep	?	Schelz et al. (2006)	NA	
Gramineae (Poaceae)	<i>Hordeum murinum</i>	<i>H. murinum</i> ssp. <i>leporinum</i> , <i>H. leporinum</i> , <i>Critesion glaucum</i>	rabbit barley	AnnG	Intro	Pres	Unc	Belnap 280 (CANY)	1987	Native to Europe
Gramineae (Poaceae)	<i>Hordeum pusillum</i>	<i>Critesion pusillum</i>	little barley	AnnG	Wide	Pres	Unc	Kitchell s.n. (CANY)	1964	
Gramineae (Poaceae)	<i>Leptochloa fascicularis</i>	<i>Diplachne fascicularis</i> , <i>L. fusca</i> var. <i>fascicularis</i>	bearded sprangletop	AnnG	Wide	Pres	Rare	Welsh 22476 (CANY)	1983	
Gramineae (Poaceae)	<i>Muhlenbergia andina</i>		foxtail muhly	PerG	Wide	Pres	Unc	Welsh, Moore, & Olsen 3762 (CANY)	1964	
Gramineae (Poaceae)	<i>Muhlenbergia asperifolia</i>		scratchgrass	PerG	Wide	Pres	Unc	Welsh, Moore & Olsen 3705 (CANY)	1964	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Gramineae (Poaceae)	<i>Muhlenbergia pauciflora</i>	Includes reports of <i>M. arsenoi</i>	New Mexican muhly	PerG	Wide	Pres	Rare	Heil, Porter, & Fleming 5999 (CANY)	1990	
Gramineae (Poaceae)	<i>Muhlenbergia porteri</i>		bush muhly	PerG	Wide	Pres	Unc	Welsh 22494 (CANY)	1983	
Gramineae (Poaceae)	<i>Muhlenbergia pungens</i>		sandhill muhly	PerG	Wide	Pres	Unc	Welsh & Moore 3864 (CANY)	1964	
Gramineae (Poaceae)	<i>Muhlenbergia thurberi</i>	Includes <i>M. curtifolia</i>	Thurber's muhly	PerG	Wide	Pres	Rare	Topp ST082804003 (CANY)	2003	Type locality of <i>M. curtifolia</i> is between Kanab & Carmel, Kane Co., UT (Jones 6077) US
Gramineae (Poaceae)	<i>Munroa squarrosa</i>		false buffalograss	AnnG	Wide	Pres	Unc	Topp SET10120301 (CANY)	2003	
Gramineae (Poaceae)	<i>Oryzopsis micrantha</i>	<i>Piptatherum micranthum</i>	littleseed ricegrass	PerG	Wide	Pres	Unc	Heil, Porter, & Fleming 5990 (CANY)	1990	
Gramineae (Poaceae)	<i>Panicum acuminatum</i>	<i>P. occidentale</i> , <i>P. tennesseense</i> , <i>P. huachucae</i> , <i>Dichantherium acuminatum</i> ssp. <i>fasciculatum</i> , <i>D. lanuginosum</i> var. <i>fasciculatum</i>	bundle panicgrass	PerG	Wide	Pres	Unc	Welsh, Moore & Olsen 3702 (CANY)	1964	
Gramineae (Poaceae)	<i>Panicum capillare</i>	<i>P. capillare</i> var. <i>occidentale</i>	witchgrass	AnnG	Wide	Pres	Unc	Welsh 22630 (CANY)	1983	
Gramineae (Poaceae)	<i>Panicum obtusum</i>		vine mesquite	PerG	Wide	Pres	Unc	Kitchell 67 (CANY)	1977	
Gramineae (Poaceae)	<i>Panicum virgatum</i>		switchgrass	PerG	Wide	Pres	Unc	Welsh, Moore & Olsen 3756 (CANY)	1964	
Gramineae (Poaceae)	<i>Phleum pratense</i>		timothy	PerG	Intro	Rep	NA	Scholz et al. (2006)	NA	Native to Eurasia

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Gramineae (Poaceae)	<i>Phragmites australis</i>	<i>P. communis</i>	common reed	PerG	Wide	Pres	Unc	Welsh, Moore & Olsen 3754 (CANY)	1964	
Gramineae (Poaceae)	<i>Poa bigelovii</i>		Bigelow's bluegrass	AnnG	Wide	Rep	NA	Schelz et al. (2006)	NA	
Gramineae (Poaceae)	<i>Poa bulbosa</i>		bulbous bluegrass	PerG	Intro	Rep	NA	Schelz et al. (2006)	NA	Native to Eurasia and Africa
Gramineae (Poaceae)	<i>Poa fendleriana</i>	<i>P. longiligula</i> , <i>P. fendleriana</i> ssp. <i>longiligula</i> , includes reports of <i>P. cusickii</i> & <i>P. epilis</i>	muttongrass	PerG	Wide	Pres	Com	Welsh, Moore & Canter 2911 (CANY)	1964	
Gramineae (Poaceae)	<i>Poa secunda</i>	Includes <i>P. gracillima</i> , <i>P. juncifolia</i> , <i>P. sandbergii</i> , <i>P. canbyi</i> , <i>P. scabrella</i> , <i>P. nevadensis</i> , <i>P. ampla</i> and all vars. of <i>P. secunda</i>	Sandberg's bluegrass	PerG	Wide	Pres	Unc	Topp ST050904002 (CANY)	1999	
Gramineae (Poaceae)	<i>Polypogon monspeliensis</i>		rabbitfoot-grass	AnnG	Intro	Pres	Unc	Belnap 182 (CANY)	1987	Native to Eurasia and Africa
Gramineae (Poaceae)	<i>Polypogon semiverticillatus</i>	<i>Agrostis semiverticillata</i> , <i>P. viridis</i>	water polypogon	PerG	Intro	Pres	Unc	Welsh & Moore 3844 (CANY)	1964	Native to Eurasia and Africa
Gramineae (Poaceae)	<i>Puccinellia nuttalliana</i>	<i>P. airoides</i>	Nuttall's alkaligrass	PerG	Wide	Pres	Unc	Welsh, Moore & Canter 2994 (CANY)	1964	
Gramineae (Poaceae)	<i>Schizachyrium scoparium</i>	<i>Andropogon scoparius</i> , <i>S. scoparium</i> var. <i>neomexicanum</i>	little bluestem	PerG	Wide	Pres	Unc	Welsh, Moore & Olsen 3761 (CANY)	1964	
Gramineae (Poaceae)	<i>Sorghum halepense</i>		Johnson-grass	PerG	Intro	Pres	Unc	Belnap 367 (CANY)	1983	Utah state noxious weed. Native to Eurasia

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Gramineae (Poaceae)	<i>Spartina gracilis</i>		alkali cordgrass	PerG	Wide	Pres	Unc	Heil & Fleming 6181 (CANY)	1990	
Gramineae (Poaceae)	<i>Spartina pectinata</i>		prairie cordgrass	PerG	Sparse	Rep	?	Schelz et al. (2006)	NA	
Gramineae (Poaceae)	<i>Sporobolus airoides</i> var. <i>airoides</i>	<i>S. airoides</i>	alkali sacaton	PerG	Wide	Pres	Unc	Welsh, Moore & Olsen 3760 (CANY)	1964	
Gramineae (Poaceae)	<i>Sporobolus contractus</i>		spike dropseed	PerG	Wide	Pres	Unc	Welsh 22615 (CANY)	1964	
Gramineae (Poaceae)	<i>Sporobolus cryptandrus</i>		sand dropseed	PerG	Wide	Pres	Unc	Welsh 22641 (CANY)	1967	
Gramineae (Poaceae)	<i>Sporobolus flexuosus</i>		mesa dropseed	PerG	Wide	Pres	Unc	Belnap 327 (CANY)	1964	
Gramineae (Poaceae)	<i>Sporobolus giganteus</i>		giant dropseed	PerG	Wide	Pres	Unc	Welsh, Moore & Olsen 3769 (CANY)	1964	
Gramineae (Poaceae)	<i>Stipa arida</i>	<i>Achnatherum aridum</i>	Mormon needlegrass	PerG	Wide	Pres	Unc	Welsh, Moore & Canter 2892 (CANY)	1964	Type locality is near Milford, Beaver Co., UT (Jones 2106)
Gramineae (Poaceae)	<i>Stipa comata</i> var. <i>comata</i>	<i>Hesperostipa comata</i> var. <i>comata</i>	needle-and-thread	PerG	Wide	Pres	Unc	Welsh, Moore & Canter 2890 (CANY)	1964	
Gramineae (Poaceae)	<i>Stipa coronata</i> var. <i>parishii</i>	<i>Achnatherum coronatum</i> , <i>A. parishii</i> ssp. <i>parishii</i> , <i>S. parishii</i>	crested needlegrass	PerG	Wide	Pres	Unc	Welsh, Moore & Canter 3011 (CANY)	1964	
Gramineae (Poaceae)	<i>Stipa hymenoides</i>	<i>Oryzopsis hymenoides</i> , <i>Achnatherum hymenoides</i>	Indian ricegrass	PerG	Wide	Pres	Com	Belnap 259 (CANY)	1964	
Gramineae (Poaceae)	<i>Stipa neomexicana</i>	<i>Hesperostipa neomexicana</i>	New Mexico featherglass	PerG	Wide	Pres	Rare	Topp ST051004001 (CANY)	2004	

Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Gramineae (Poaceae)	<i>Stipa speciosa</i>	<i>Achnatherum speciosum</i> , <i>Jarava speciosa</i>	desert needlegrass	PerG	Wide	Pres	Unc	Belnap 150 (CANY)	1987	
Gramineae (Poaceae)	<i>Stipa x bloomeri</i>	<i>Stiporyzopsis x bloomeri</i> , <i>Achnatherum x bloomeri</i> . Hybrids between <i>S. hymenoides</i> and other <i>Stipa</i> species except <i>S. comata</i>	Bloomer's ricegrass	PerG	Wide	Pres	Unc	Fertig 22632 (CANY)	2006	
Gramineae (Poaceae)	<i>Tridens muticus</i>	<i>T. muticus</i> var. <i>elongatus</i>	slim tridens	PerG	Wide	Pres	Unc	Welsh, Moore & Olsen 3784 (CANY)	1964	
Hydrophyllaceae	<i>Nama densum</i> var. <i>parviflorum</i>		leafy fiddleleaf	AnnF	Wide	Rep	?	Schelz et al. (2006)	NA	
Hydrophyllaceae	<i>Phacelia crenulata</i> var. <i>corrugata</i>	Var. not recognized in Cronquist et al. (1984)	corrugate phacelia	AnnF	Wide	Pres	Unc	Deboit 234 (CANY)	1978	
Hydrophyllaceae	<i>Phacelia howelliana</i>	Included in <i>P. crenulata</i> by some authors	Howell's phacelia	AnnF	RegEn	Pres	Unc	Welsh 21815 (CANY)	1983	Type locality is 0.4 miles N of Bluff, San Juan Co., UT (Atwood 2454 BRY). USFWS: 3C
Hydrophyllaceae	<i>Phacelia ivesiana</i>		Ives' phacelia	AnnF	Wide	Pres	Unc	Belnap 390 (CANY)	1979	
Juncaceae	<i>Juncus arcticus</i>	<i>J. arcticus</i> var. <i>balticus</i> , <i>J. balticus</i> var. <i>montanus</i> , <i>J. arcticus</i> ssp. <i>ater</i> , includes var. <i>mexicanus</i>	Baltic rush	PerG	Wide	Pres	Unc	Belnap 407 (CANY)	1987	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Juncaceae	<i>Juncus ensifolius</i> var. <i>brunnescens</i>	Included in <i>J. ensifolius</i> var. <i>montanus</i> by some authors, <i>J. saximontanus</i> forma <i>brunnescens</i>	Tracy's rush	PerG	Wide	Pres	Unc	Heil, Porter, & Fleming 5953 (CANY)	1987	
Juncaceae	<i>Juncus ensifolius</i> var. <i>montanus</i>	<i>J. saximontanus</i> . Includes <i>J. tracyi</i> , <i>J. xiphooides</i>	mountain rush	PerG	Wide	Pres	Unc	Welsh, Moore & Olsen 3755 (CANY)	1964	
Juncaceae	<i>Juncus longistylis</i>		longstyle rush	PerG	Wide	Pres	Unc	Welsh, Moore & Canter 2956 (CANY)	1964	
Juncaceae	<i>Juncus nodosus</i>		knotted rush	PerG	Wide	Pres	Unc	Schelz s.n. (CANY)	1997	
Juncaceae	<i>Juncus tenuis</i>	Includes vars. <i>dudleyi</i> , <i>congestus</i> , & <i>tenuis</i>	poverty rush	PerG	Wide	Rep	?	Schelz et al. (2006)	NA	
Juncaceae	<i>Juncus torreyi</i>		Torrey's rush	PerG	Wide	Pres	Unc	Belnap 345 (CANY)	1987	
Labiatae (Lamiaceae)	<i>Dracocephalum parviflorum</i>	<i>Moldavica parviflora</i>	smallflower dragonhead	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2965 (CANY)	1964	
Labiatae (Lamiaceae)	<i>Hedeoma drummondii</i>		mock pennyroyal	PerF	Wide	Pres	Unc	Heil, Porter, & Fleming 5945 (CANY)	1964	
Labiatae (Lamiaceae)	<i>Lycopus americanus</i>		American bugleweed	PerF	Wide	Pres	Rare	Hahn LAH09140307 (CANY)	2003	
Labiatae (Lamiaceae)	<i>Marrubium vulgare</i>		common horehound	PerF	Intro	Pres	Rare	Castello s.n. (CANY)	2007	Native to Eurasia
Labiatae (Lamiaceae)	<i>Poliomintha incana</i>		purple sage	Shrub	Wide	Pres	Unc	Heil, Porter, & Fleming 6003 (CANY)	1990	
Leguminosae (Fabaceae, Mimosaceae)	<i>Albizia julibrissin</i>		silk-tree	Tree	Intro	Pres	Rare	Fertig 22629 (CANY)	2006	Native to SC Asia

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Leguminosae (Fabaceae)	<i>Astragalus amphioxys</i> var. <i>amphioxys</i>		crescent milkvetch	PerF	Wide	Pres	Com	Belnap 160 (CANY)	1979	
Leguminosae (Fabaceae)	<i>Astragalus amphioxys</i> var. <i>vespertinus</i>		Sheldon's milkvetch	PerF	RegEn	Pres	Unc	Welsh 7073 (BRY)	1968	
Leguminosae (Fabaceae)	<i>Astragalus ceramicus</i> var. <i>ceramicus</i>		painted milkvetch	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2846 (CANY)	1964	
Leguminosae (Fabaceae)	<i>Astragalus chamaeleuce</i>	<i>A. chamaeleuce</i> var. <i>chamaeleuce</i>	cidada milkvetch	PerF	RegEn	Rep	?	Anderson (1983)	1983	
Leguminosae (Fabaceae)	<i>Astragalus coltonii</i> var. <i>moabensis</i>		Moab milkvetch	PerF	RegEn	Rep	?	Loope (1977)	NA	Type locality is near Monticello, San Juan Co., UT (Eastwood 9 POM)
Leguminosae (Fabaceae)	<i>Astragalus desperatus</i> var. <i>desperatus</i>		rimrock milkvetch	PerF	RegEn	Pres	Unc	Belnap 196 (CANY)	1983	Type locality is near Cisco, Grand Co., UT (Jones s.n. POM)
Leguminosae (Fabaceae)	<i>Astragalus episcopus</i>	<i>A. episcopus</i> var. <i>episcopus</i>	Bishop's milkvetch	PerF	RegEn	Pres	Rare	Topp ST050604003 (CANY)	2004	Type locality is 'southern Utah', Kane Co?, UT (Bishop s.n. GH)
Leguminosae (Fabaceae)	<i>Astragalus flavus</i> var. <i>flavus</i>	<i>A. flavus</i> var. <i>candicans</i>	yellow milkvetch	PerF	Wide	Rep	?	Schelz et al. (2006)	NA	Type locality of var. <i>candicans</i> is near Richfield, Sevier Co., UT (Ward 246 GH)
Leguminosae (Fabaceae)	<i>Astragalus flexuosus</i> var. <i>flexuosus</i>		pliant milkvetch	PerF	Periph	Rep	?	Anderson (1983)	1983	
Leguminosae (Fabaceae)	<i>Astragalus fucatus</i>		Hopi milkvetch	PerF	RegEn	Pres	Rare	Heil, Porter, & Fleming 5880 (CANY)	1990	
Leguminosae (Fabaceae)	<i>Astragalus kentrophyta</i> var. <i>coloradoensis</i>		canyon kentrophyta	PerF	RegEn	Pres	Unc	Heil, Porter, & Fleming 5904 (CANY)	1990	



**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Leguminosae (Fabaceae)	<i>Astragalus lentiginosus</i> var. <i>palans</i>		straggling milkvetch	PerF	RegEn	Pres	Unc	Welsh, Moore & Canter 2848 (CANY)	1964	Type locality is Montezuma Canyon, San Juan Co., UT (Eastwood s.n. POM)
Leguminosae (Fabaceae)	<i>Astragalus lonchocarpus</i>		great rushy milkvetch	PerF	Wide	Pres	Unc	Belnap 215 (CANY)	1985	Type locality is 'southern Utah', (Parry 32 ISC)
Leguminosae (Fabaceae)	<i>Astragalus moencoppensis</i>		Moenkopi milkvetch	PerF	RegEn	Pres	Unc	Fleming 801 (CANY)	1987	
Leguminosae (Fabaceae)	<i>Astragalus mollissimus</i> var. <i>thompsoniae</i>		woolly milkvetch	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2838 (CANY)	1964	Type locality is Kanab, Kane Co., UT (Thompson s.n. GH)
Leguminosae (Fabaceae)	<i>Astragalus monumentalis</i>	<i>A. monumentalis</i> var. <i>monumentalis</i>	Monument milkvetch	PerF	LocEn	Pres	Unc	Welsh, Moore & Canter 2888 (CANY)	1964	Type locality is White Canyon, San Juan Co., UT (Harrison 11595 US). USFWS: 3C
Leguminosae (Fabaceae)	<i>Astragalus musiniensis</i>		Ferron milkvetch	PerF	RegEn	Pres	Rare	Welsh & Atwood 9919 (BRY)	1970	Type locality is 2 miles S of Ferron, Emery Co., UT (Jones 5454a POM)
Leguminosae (Fabaceae)	<i>Astragalus nidularius</i>		birds-nest milkvetch	PerF	LocEn	Pres	Rare	Heil, Porter, & Fleming 5899a (CANY)	1990	Type locality is White Canyon, 2 miles below Kachina Bridge, San Juan Co., UT (Barneby 12778 CAS). USFWS: 3C
Leguminosae (Fabaceae)	<i>Astragalus nuttallianus</i> var. <i>micranthiformis</i>		small-flowered milkvetch	AnnF	RegEn	Pres	Unc	Welsh 21820 (CANY)	1983	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Leguminosae (Fabaceae)	<i>Astragalus piscator</i>		Fisher milkvetch	PerF	LocEn	Pres	Unc	Welsh, Moore & Canter 2979 (CANY)	1964	Type locality is Salt Canyon above The Jump, Canyonlands NP, San Juan Co., UT (Welsh, Moore, & Canter 2979 BRY)
Leguminosae (Fabaceae)	<i>Astragalus praelongus</i> var. <i>lonchopus</i>		longstipe milkvetch	PerF	RegEn	Rep	?	Schelz et al. (2006)	NA	
Leguminosae (Fabaceae)	<i>Astragalus praelongus</i> var. <i>praelongus</i>		stinking milkvetch	PerF	Wide	Pres	Unc	Welsh 21808 (CANY)	1983	
Leguminosae (Fabaceae)	<i>Astragalus preussii</i> var. <i>latus</i>	Included in var. <i>preussii</i> by some authors	Preuss' milkvetch	PerF	RegEn	Pres	Unc	Debolt 381 (CANY)	1983	Type locality is Green River, Emery Co., UT (Jones s.n. POM)
Leguminosae (Fabaceae)	<i>Astragalus sabulorum</i>		gravel milkvetch	AnnF	Wide	Pres	Unc	Heil & Fleming 6081 (CANY)	1987	
Leguminosae (Fabaceae)	<i>Astragalus sesquiflorus</i>		sandstone milkvetch	PerF	RegEn	Pres	Rare	Heil & Fleming 6186 (CANY)	1990	Type locality is 'southern Utah' (near Kanab), Kane Co., UT (Bishop s.n. GH)
Leguminosae (Fabaceae)	<i>Dalea flavescens</i> var. <i>flavescens</i>		Kanab prairie-clover	PerF	RegEn	Pres	Unc	Welsh, Moore & Canter 3006 (CANY)	1964	Type locality is "Kanab" (but probably from farther east. Thompson s.n. GH)
Leguminosae (Fabaceae)	<i>Dalea oligophylla</i>	<i>Petalostemon candidum</i> , <i>P. occidentale</i> , <i>D. candida</i> var. <i>oligophylla</i>	white prairie-clover	PerF	Wide	Pres	Unc	Belnap 334 (CANY)	1987	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Leguminosae (Fabaceae)	<i>Glycyrrhiza lepidota</i>	<i>G. lepidota</i> var. <i>lepidota</i>	Nuttall's licorice	PerF	Wide	Pres	Unc	Chrobak 835 (CANY)	1985	
Leguminosae (Fabaceae)	<i>Hedysarum boreale</i> var. <i>boreale</i>	Includes var. <i>pabulare</i>	northern sweetvetch	PerF	Wide	Pres	Unc	Debolt 164 (CANY)	1983	
Leguminosae (Fabaceae)	<i>Lathyrus brachycalyx</i> var. <i>zionis</i>		Zion sweetpea	PerF	RegEn	Pres	Unc	Belnap 459 (CANY)	1987	Type locality is 10 miles E of Zion NP, Kane Co., UT (Hitchcock 19013 isotype NY)
Leguminosae (Fabaceae)	<i>Lupinus argenteus</i> var. <i>moabensis</i>		Moab lupine	PerF	RegEn	Pres	Unc	Johnson 31 (CANY)	1979	Type locality is Professor Valley Ranch, Grand Co., UT (Welsh & Taylor 14632 BRY)
Leguminosae (Fabaceae)	<i>Lupinus brevicaulis</i>		shortstem lupine	AnnF	Wide	Pres	Unc	Schelz s.n. (CANY)	1997	
Leguminosae (Fabaceae)	<i>Lupinus pusillus</i> var. <i>pusillus</i>		dwarf lupine	AnnF	Wide	Pres	Unc	Welsh, Moore, & Canter 2832 (CANY)	1964	
Leguminosae (Fabaceae)	<i>Medicago sativa</i>	<i>M. sativa</i> var. <i>sativa</i>	alfalfa	PerF	Intro	Rep	?	Schelz et al. (2006)	NA	Native to Europe
Leguminosae (Fabaceae)	<i>Melilotus alba</i>	<i>M. albus</i> . Included in <i>M. officinalis</i> by some authors	white sweet-clover	AnnF	Intro	Pres	Unc	Chrobak 516 (CANY)	1985	Native to Europe
Leguminosae (Fabaceae)	<i>Melilotus officinalis</i>		yellow sweet-clover	PerF	Intro	Pres	Unc	Chrobak 863 (CANY)	1985	Native to Europe
Leguminosae (Fabaceae)	<i>Pedimelum megalanthum</i>	<i>Psoralea megalantha</i> , <i>Pedimelum megalanthum</i> var. <i>megalanthum</i>	large-flowered breadroot	PerF	RegEn	Pres	Unc	Welsh, Moore & Canter 2889 (CANY)	1964	

Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Leguminosae (Fabaceae)	<i>Peteria thompsoniae</i>		Thompson's peteria	PerF	RegEn	Pres	Unc	Welsh 5382 (CANY)	1966	Type locality is Kanab, Kane Co., UT (Thompson s.n. GH)
Leguminosae (Fabaceae)	<i>Psoralidium lanceolatum</i> var. <i>lanceolatum</i>	<i>Psoralea lanceolata</i> Vars. not recognized in Barneby (1989)	lemon scurf-pea	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 3010 (CANY)	1964	
Leguminosae (Fabaceae)	<i>Psoralidium lanceolatum</i> var. <i>stenophyllum</i>	Vars. not recognized in Barneby (1989)	slenderleaf scurfpea	PerF	RegEn	Pres	Unc	Welsh 5387 (CANY)	1966	Type locality is near Wilson Mesa, Grand Co., UT (Rydberg & Garrett 8367 NY)
Leguminosae (Fabaceae)	<i>Psorothamnus thompsoniae</i> var. <i>thompsoniae</i>		Thompson's indigo-bush	Shrub	LocEn	Rep	?	Schelz et al. (2006)	NA	Type locality in N AZ, near Kanab, or along the Colorado River in SE UT or AZ (Thompson s.n. US). USFWS: 3C
Leguminosae (Fabaceae)	<i>Sophora nuttalliana</i>		silky sophora	PerF	Sparse	Rep	?	Schelz et al. (2006)	NA	
Leguminosae (Fabaceae)	<i>Sophora stenophylla</i>		silvery sophora	PerF	Wide	Pres	Unc	Welsh, Moore & Olsen 3683 (CANY)	1964	
Leguminosae (Fabaceae)	<i>Vicia ludoviciana</i>		Louisiana vetch	AnnF	Wide	Pres	Unc	Welsh, Moore & Canter 2982 (CANY)	1964	
Liliaceae (Alliaceae)	<i>Allium macropetalum</i>		San Juan onion	PerF	Wide	Pres	Unc	Allen 85 (CANY)	1978	
Liliaceae (Alliaceae)	<i>Allium nevadense</i>	Includes <i>A. atrorubens</i> var. <i>cristatum</i> in Welsh et al. (2003).	Nevada onion	PerF	Wide	Pres	Unc	Johnson 47 (CANY)	1979	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Liliaceae (Alliaceae, Themidaceae)	<i>Androstephium breviflorum</i>	<i>Brodiaea paysonii</i>	pink funnel-lily	PerF	Wide	Pres	Unc	Belnap 31 (CANY)	1987	Type locality is near Kanab, Kane Co., UT (Thompson s.n.)
Liliaceae (Asparagaceae)	<i>Asparagus officinalis</i>		asparagus	PerF	Intro	Pres	Unc	Welsh 22621 (CANY)	1983	Native to Eurasia.
Liliaceae (Calochortaceae)	<i>Calochortus aureus</i>		golden mariposa	PerF	RegEn	Pres	Unc	Graham 2 (CANY)	1987	Type locality is near Kanab, Kane Co., UT (Thompson s.n. US)
Liliaceae (Calochortaceae)	<i>Calochortus flexuosus</i>		sinuous mariposa	PerF	Wide	Pres	Unc	Chrobak 519 (CANY)	1985	Type locality is near Kanab, Kane Co., UT (Thompson s.n. GH)
Liliaceae (Calochortaceae)	<i>Calochortus nuttallii</i>		sego-lily	PerF	Wide	Pres	Unc	Allen 87 (CANY)	1967	State flower of Utah
Liliaceae (Anthericaceae)	<i>Eremocrinum albomarginatum</i>		sand lily	PerF	RegEn	Pres	Unc	Johnson 43 (CANY)	1979	Type locality is near Green River, Emery Co., UT (Jones s.n. POM)
Liliaceae (Convallariaceae or Ruscaceae)	<i>Smilacina stellata</i>	<i>Maianthemum stellatum</i>	starry false Solomon's-seal	PerF	Wide	Pres	Unc	Belnap 111 (CANY)	1987	
Liliaceae (Melanthiaceae)	<i>Zigadenus paniculatus</i>	<i>Toxicoscordion paniculatum</i>	foothills death camas	PerF	Wide	Rep	?	Loope et al (1977)	NA	
Liliaceae (Melanthiaceae)	<i>Zigadenus vaginatus</i>	<i>Anticlea vaginatus</i> . Included in <i>Z. elegans</i> by some authors	alcove death camas	PerF	LocEn	Pres	Unc	Boschen S1- 84 (CANY)	1983	Type locality is Natural Bridges NM, San Juan Co., UT (Rydberg & Garrett 9407 NY). USFWS: 3C
Linaceae	<i>Linum aristatum</i>	<i>Mesynium aristatum</i>	broom-flax	AnnF	Wide	Pres	Unc	Belnap 268 (CANY)	1964	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Linaceae	<i>Linum perenne</i> ssp. <i>lewisii</i>	<i>L. lewisii</i> var. <i>lewisii</i> , <i>Adenolinum lewisii</i>	blue flax	PerF	Wide	Pres	Unc	Allen 151 (CANY)	1978	
Linaceae	<i>Linum puberulum</i>	<i>Mesynium puberulum</i>	downy flax	AnnF	Wide	Rep	?	Schelz et al. (2006)	NA	
Linaceae	<i>Linum subteres</i>		Utah yellow-flax	PerF	RegEn	Pres	Unc	Heil & Fleming 6187 (CANY)	1983	Type locality is Willow Creek, San Juan Co., UT (Eastwood s.n.)
Loasaceae	<i>Mentzelia albicaulis</i>	<i>M. obscura</i> , <i>Acrolasia albicaulis</i> , <i>A. gracilis</i>	white-stem blazingstar	AnnF	Wide	Pres	Unc	Debolt 379 (CANY)	1978	
Loasaceae	<i>Mentzelia marginata</i>	<i>M. marginata</i> var. <i>marginata</i> . Includes var. <i>cronquistii</i> , <i>M. cronquistii</i> , <i>Nuttallia cronquistii</i>	Colorado stickleaf	PerF	RegEn	Pres	Unc	Welsh & Moore 3853 (CANY)	1964	Type locality is 75 miles W of Blanding and 10 miles E of Hite, San Juan Co., UT (Cronquist 9030 NY)
Loasaceae	<i>Mentzelia multiflora</i>	<i>M. multiflora</i> var. <i>multiflora</i> , <i>Nuttallia multiflora</i>	desert stickleaf	PerF	Wide	Pres	Unc	Welsh, Moore & Olsen 3747 (CANY)	1964	
Malvaceae	<i>Malva neglecta</i>		common mallow	AnnF	Intro	Pres	Unc	Welsh, Moore & Canter 2966 (CANY)	1964	Native to Eurasia
Malvaceae	<i>Malva leprosa</i>		alkali mallow	PerF	Wide	Pres	Unc	Welsh 22487 (CANY)	1983	
Malvaceae	<i>Sphaeralcea coccinea</i>	Includes ssp. <i>coccinea</i> , <i>elata</i> , & <i>dissecta</i>	scarlet globe-mallow	PerF	Wide	Pres	Unc	Heil, Porter, & Fleming 5996 (CANY)	1968	
Malvaceae	<i>Sphaeralcea grossularifolia</i>	<i>S. grossularifolia</i> var. <i>grossularifolia</i>	gooseberry-leaf globemallow	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2852 (CANY)	1964	

Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Malvaceae	<i>Sphaeralcea janeae</i>	<i>S. leptophylla</i> var. <i>janeae</i>	Jane's globemallow	PerF	LocEn	Pres	Unc	Welsh & Chatterley 21878 (CANY)	1968	Type locality is along White Rim Road, Canyonlands National Park, San Juan Co., UT (Welsh 7064 BRY). UT BLM: Sensitive, USFWS: former C2 candidate
Malvaceae	<i>Sphaeralcea leptophylla</i>		slenderleaf globemallow	PerF	Wide	Pres	Unc	Allen 160 (CANY)	1967	
Malvaceae	<i>Sphaeralcea moorei</i>	<i>S. grossularifolia</i> var. <i>moorei</i>	Moore's globemallow	PerF	LocEn	Pres	Unc	Thorne, Thomas, & Inskip 5171 (CANY)	1987	Type locality is E side of Last Chance Bay, Lake Powell, Kane Co., UT (Welsh & Atwood 11597 BRY)
Malvaceae	<i>Sphaeralcea parvifolia</i>		small-leaf globemallow	PerF	Wide	Pres	Com	Welsh 21809 (CANY)	1964	
Moraceae	<i>Morus alba</i>		white mulberry	Tree	Intro	Rep	?	Schelz et al. (2006)	NA	Native to China
Nyctaginaceae	<i>Abronia fragrans</i>	<i>A. elliptica</i> , <i>A. fragrans</i> var. <i>elliptica</i> , <i>A. nana</i> var. <i>harrisii</i>	fragrant sand-verbena	PerF	Wide	Pres	Com	Welsh, Moore & Canter 2863 (CANY)	1964	
Nyctaginaceae	<i>Allionia incarnata</i>	<i>A. incarnata</i> var. <i>incarnata</i>	trailing four-o'clock	PerF	Wide	Pres	Unc	Belnap 362 (CANY)	1981	
Nyctaginaceae	<i>Mirabilis linearis</i> var. <i>linearis</i>	<i>Oxybaphus linearis</i> , <i>O. decumbens</i>	narrow-leaf four-o'clock	PerF	Wide	Pres	Unc	Belnap 343 (CANY)	1978	
Nyctaginaceae	<i>Mirabilis multiflora</i>	Includes vars. <i>multiflora</i> , <i>pubescens</i> , & <i>glandulosa</i>	showy four-o'clock	PerF	Wide	Pres	Unc	Welsh 5394 (CANY)	1964	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Nyctaginaceae	<i>Tripterocalyx carneus</i> var. <i>wootonii</i>	<i>T. wootonii</i>	Wooton's sand- verbena	AnnF	RegEn	Rep	?	Schelz et al. (2006)	NA	
Nyctaginaceae	<i>Tripterocalyx micranthus</i>	<i>Abronia micrantha</i> , <i>T. pedunculatus</i>	small-flower sandpuffs	AnnF	Wide	Pres	Unc	Thorne, Thomas, & Inskip 5164 (CANY)	1978	
Oleaceae	<i>Forestiera pubescens</i>	<i>F. neomexicana</i>	desert olive	Shrub	Wide	Pres	Unc	Heil, Porter, & Fleming 5954 (CANY)	1964	
Oleaceae	<i>Fraxinus anomala</i>		singleleaf ash	Shrub	Wide	Pres	Com	Welsh & Chatterley 21889 (CANY)	1964	Type locality is Labyrinth Canyon, San Juan Co., UT (Newberry s.n. NY)
Onagraceae	<i>Calylophus lavandulifolius</i>	<i>C. hartwegii</i> ssp. <i>lavandulifolius</i>	lavender-leaf sundrops	PerF	Wide	Pres	Com	Welsh, Moore & Canter 2885 (CANY)	1964	
Onagraceae	<i>Camissonia walkeri</i>		Walker's camissonia	AnnF	Wide	Pres	Unc	Welsh 22603 (CANY)	1983	Type locality is Paradox Valley, Montrose Co., CO
Onagraceae	<i>Epilobium ciliatum</i>	<i>E. ciliatum</i> var. <i>ciliatum</i> , <i>E. watsonii</i> , <i>E.</i> <i>adenocaulon</i>	northern willow- herb	PerF	Wide	Pres	Unc	Schelz 7.14.98 (CANY)	1998	
Onagraceae	<i>Gaura parviflora</i>	<i>G. mollis</i>	small-flowered <i>gaura</i>	AnnF	Wide	Pres	Unc	Belnap 135 (CANY)	1983	
Onagraceae	<i>Oenothera albicaulis</i>		white-stem evening-primrose	AnnF	Wide	Pres	Unc	Belnap 272 (CANY)	1987	
Onagraceae	<i>Oenothera caespitosa</i> var. <i>marginata</i>		long-tube evening- primrose	PerF	Wide	Pres	Unc	Allen 172 (CANY)	1978	
Onagraceae	<i>Oenothera caespitosa</i> var. <i>navajoensis</i>		Paria evening- primrose	PerF	RegEn	Pres	Unc	Johnson 11 (CANY)	1979	Type locality is Paria River, Kane Co., UT (Cronquist 10202 MO)



**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Onagraceae	<i>Oenothera longissima</i>		Bridges evening-primrose	PerF	RegEn	Pres	Unc	Welsh, Moore & Canter 3757 (CANY)	1964	Type locality is Armstrong & White canyons [Natural Bridges NM], San Juan Co., UT (Rydberg & Garrett 9410 NY)
Onagraceae	<i>Oenothera pallida</i> var. <i>pallida</i>	Includes var. <i>runcinata</i>	pale evening-primrose	PerF	Wide	Pres	Unc	Belnap 167 (CANY)	1967	
Orchidaceae	<i>Epipactis gigantea</i>		giant helleborine	PerF	Wide	Pres	Unc	Welsh 5389 (CANY)	1966	
Orchidaceae	<i>Habenaria zothecina</i>	<i>Platanthera zothecina</i> , <i>Limnorchis zothecina</i>	alcove bog-orchid	PerF	RegEn	Pres	Unc	Fowler & May 1595 (CANY)	1964	Type locality is ca 1 mile N of Moab, Grand Co., UT (Welsh & Higgins 23269 BRY). UT BLM: Sensitive, USFWS: former C2 candidate
Orobanchaceae	<i>Orobanche fasciculata</i>	<i>Aphyllon fasciculatum</i>	clustered broomrape	PerF	Wide	Pres	Unc	Schelz 6.1.98 (CANY)	1983	
Orobanchaceae	<i>Orobanche ludoviciana</i> var. <i>cooperi</i>	Includes reports of <i>O. multiflora</i> , <i>O. cooperi</i>	Cooper's broomrape	PerF	Wide	Pres	Unc	Belnap 356 (CANY)	1978	
Papaveraceae	<i>Argemone corymbosa</i> var. <i>arenicola</i>		San Rafael prickly-poppy	PerF	RegEn	Rep	?	Schelz et al. (2006)	NA	Type locality is 37.9 miles SW of Green River, Emery Co., UT (Ownbey & Ownbey 2146)

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Papaveraceae	<i>Argemone corymbosa</i> var. <i>parva</i>		San Rafael prickly-poppy	PerF	LocEn	Pres	Rare	Thorne, Thomas, & Inskip 5175 (CANY)	1987	Type locality is bluffs along Colorado River along Hwy 129, Grand Co., UT (Welsh 6857 BRY)
Pinaceae	<i>Abies concolor</i>		white fir	Tree	Wide	Pres	Rare	Wilson s.n. (UTC)	1970	
Pinaceae	<i>Pinus edulis</i>		two-needle pinyon	Tree	Wide	Pres	Abun	Welsh, Moore & Olsen 3732 (CANY)	1964	
Pinaceae	<i>Pinus ponderosa</i> var. <i>scopulorum</i>		ponderosa pine	Tree	Wide	Pres	Unc	Welsh, Moore & Canter 3001 (CANY)	1964	
Pinaceae	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>		Douglas-fir	Tree	Wide	Pres	Unc	Belnap 498 (CANY)	1987	
Plantaginaceae	<i>Plantago major</i>	Includes var. <i>pachyphylla</i>	common plantain	PerF	Intro	Pres	Unc	Belnap 140 (CANY)	1987	Mostly native to Europe. Type locality of the native phase "var. <i>pachyphylla</i> " is Salt Lake City, Salt Lake Co., UT (Jones 1030 POM)
Plantaginaceae	<i>Plantago patagonica</i>	Includes vars. <i>patagonica</i> , <i>gnaphaloides</i> , <i>spinulosa</i> , & <i>breviscapa</i>	woolly plantain	AnnF	Wide	Pres	Unc	Welsh, Moore & Canter 2968 (CANY)	1964	
Polemoniaceae	<i>Gilia hutchinsifolia</i>	<i>Alicella hutchinsifolia</i>	broadlobe gilia	AnnF	Wide	Pres	Rare	Scholz s.n. (CANY)	2004	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Polemoniaceae	<i>Gilia imperialis</i>	<i>G. latifolia</i> var. <i>imperialis</i> , <i>Aliciella latifolia</i> ssp. <i>imperialis</i>	Cataract gilia	AnnF	LocEn	Pres	Rare	Higgins, Welsh, & Welsh 14163 (CANY)	1983	Type locality is Cataract Canyon N of Imperial Canyon, San Juan Co., UT (Welsh 22507 BRY). UT BLM: Sensitive
Polemoniaceae	<i>Gilia inconspicua</i>	Includes var. <i>inconspicua</i> & <i>sinuata</i> , <i>G. ophthalmooides</i> , <i>G. sinuata</i> , <i>G. clokeyi</i> , <i>G. transmontana</i>	shy gilia	AnnF	Wide	Pres	Unc	Heil, Porter, & Fleming 5918 (CANY)	1967	CANY material mostly var. <i>sinuata</i> (if recognized), but also includes at least one collection of var. <i>inconspicua</i> .
Polemoniaceae	<i>Gilia leptomeria</i> var. <i>leptomeria</i>	<i>Aliciella leptomeria</i>	common gilia	AnnF	Wide	Pres	Unc	Belnap 247 (CANY)	1979	
Polemoniaceae	<i>Gilia subnuda</i>	<i>Aliciella subnuda</i>	carmine gilia	PerF	RegEn	Pres	Unc	Belnap 391 (CANY)	1987	
Polemoniaceae	<i>Ipomopsis aggregata</i> var. <i>aggregata</i>	<i>Gilia aggregata</i> var. <i>aggregata</i>	scarlet gilia	PerF	Wide	Pres	Unc	Welsh 22608 (CANY)	1964	
Polemoniaceae	<i>Ipomopsis gunnisonii</i>	<i>Gilia gunnisonii</i>	Gunnison's gilia	AnnF	RegEn	Pres	Com	Belnap 370 (CANY)	1987	Type locality is "sand banks of the Green River", UT (Cruetzfeldt s.n. NY)
Polemoniaceae	<i>Ipomopsis longiflora</i>	<i>Gilia longiflora</i>	long-flowered gilia	PerF	Wide	Pres	Unc	Debolt 166 (CANY)	1964	
Polemoniaceae	<i>Ipomopsis polycladon</i>	<i>Gilia polycladon</i>	spreading gilia	AnnF	Wide	Pres	Unc	Welsh & Chatterley 21877 (CANY)	1983	
Polemoniaceae	<i>Ipomopsis pumila</i>	<i>Gilia pumila</i>	dwarf gilia	AnnF	Wide	Pres	Unc	Johnson 42 (CANY)	1979	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Polemoniaceae	<i>Ipomopsis roseata</i>	<i>Gilia roseata</i>	San Rafael gilia	PerF	RegEn	Pres	Unc	Heil, Porter, & Fleming 5925 (CANY)	1987	
Polemoniaceae	<i>Leptodactylon pungens</i>	<i>Leptodactylon pungens</i> var. <i>pungens</i> , <i>Linanthus pungens</i>	prickly-phlox	Shrub	Wide	Pres	Unc	Debolt 380 (CANY)	1984	
Polemoniaceae	<i>Leptodactylon watsonii</i>	<i>Linanthus watsonii</i>	Watson's prickly-phlox	PerF	Wide	Pres	Unc	Heil, Porter, & Fleming 5995 (CANY)	1990	Type locality is Cottonwood Canyon, Salt Lake Co., UT (Watson s.n. GH)
Polemoniaceae	<i>Phlox hoodii</i> var. <i>canescens</i>	Includes ssp. <i>glabrata</i> , <i>hoodii</i> , & <i>viscidula</i>	carpet phlox	PerF	Wide	Pres	Unc	Belnap 38 (CANY)	1979	
Polemoniaceae	<i>Phlox longifolia</i>	Includes vars. <i>longifolia</i> and <i>stansburyi</i>	long-leaf phlox	PerF	Wide	Pres	Unc	Schelz s.n. (CANY)	1997	
Polygonaceae	<i>Eriogonum alatum</i>	<i>E. alatum</i> var. <i>alatum</i> , <i>Pterogonum alatum</i>	winged wild buckwheat	PerF	Wide	Pres	Unc	Belnap 249 (CANY)	1978	
Polygonaceae	<i>Eriogonum bicolor</i>		pretty wild buckwheat	PerF	RegEn	Pres	Unc	Heil, Porter, & Fleming 5896 b (CANY)	1968	Type locality is Thompson's Springs, Grand Co., UT (Jones s.n. POM)
Polygonaceae	<i>Eriogonum cernuum</i> var. <i>cernuum</i>	Vars. not recognized in <i>Flora of North America</i> (2005)	nodding wild buckwheat	AnnF	Wide	Pres	Unc	Allen 101 (CANY)	1967	
Polygonaceae	<i>Eriogonum corymbosum</i> var. <i>corymbosum</i>	Includes var. <i>velutinum</i> and <i>E. lancifolium</i>	crisp-leaf wild buckwheat	Shrub	Wide	Pres	Unc	Welsh & Moore 3854 (CANY)	1964	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Polygonaceae	<i>Eriogonum corymbosum</i> var. <i>orbiculatum</i>		rimrock wild buckwheat	Shrub	RegEn	Pres	Unc	Fertig 22637 (CANY)	2006	Type locality is Green River, Emery Co., UT (Jones s.n. POM)
Polygonaceae	<i>Eriogonum deflexum</i>	<i>E. deflexum</i> var. <i>deflexum</i>	skeletonweed wild buckwheat	AnnF	Wide	Rep	?	Schelz et al. (2006)	NA	
Polygonaceae	<i>Eriogonum gordonii</i>		Gordon's wild buckwheat	AnnF	Wide	Pres	Unc	Schelz s.n. (CANY)	2001	
Polygonaceae	<i>Eriogonum inflatum</i> var. <i>inflatum</i>	<i>E. inflatum</i>	desert trumpet	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2897 (CANY)	1964	
Polygonaceae	<i>Eriogonum leptocladon</i> var. <i>leptocladon</i>		sand wild buckwheat	Shrub	RegEn	Pres	Unc	Welsh, Moore & Olsen 3731 (CANY)	1964	Type locality is Green River, Emery Co., UT (Cruzeffeldt s.n. NY)
Polygonaceae	<i>Eriogonum microthecum</i> var. <i>simpsonii</i>	<i>E. microthecum</i> var. <i>foliosum</i>	slender wild buckwheat	PerF	Wide	Pres	Com	Welsh, Moore & Olsen 3729 (CANY)	1964	
Polygonaceae	<i>Eriogonum ovalifolium</i>	<i>E. ovalifolium</i> var. <i>ovalifolium</i>	cushion wild buckwheat	PerF	Wide	Pres	Unc	Topp ST050904001 (CANY)	1999	
Polygonaceae	<i>Eriogonum palmerianum</i>		Palmer's wild buckwheat	AnnF	Wide	Pres	Unc	Belnap 88 (CANY)	1987	
Polygonaceae	<i>Eriogonum shockleyi</i>	Includes vars. <i>longilobum</i> & <i>shockleyi</i>	Shockley's wild buckwheat	PerF	Wide	Pres	Unc	Heil, Porter, & Fleming 5968 (CANY)	1990	Type locality of var. <i>longilobum</i> is near Price, Carbon Co., UT (Jones 5590j POM)
Polygonaceae	<i>Eriogonum umbellatum</i> var. <i>subaridum</i>		arid wild buckwheat	PerF	Wide	Rep	?	Schelz et al. (2006)	NA	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Polygonaceae	<i>Eriogonum wetherillii</i>		Wetherill's wild buckwheat	AnnF	RegEn	Pres	Unc	Belnap 203 (CANY)	1987	Type locality is along the San Juan River, San Juan Co., UT (Eastwood 124 CAS)
Polygonaceae	<i>Rumex hymenosepalus</i>		canaigre dock	PerF	Wide	Pres	Unc	Debolt 223 (CANY)	1983	
Polygonaceae	<i>Rumex maritimus</i> var. <i>fueginus</i>	<i>R. fueginus</i>	golden dock	AnnF	Wide	Pres	Rare	Schelz s.n. (CANY)	2002	
Polygonaceae	<i>Rumex venosus</i>		veiny dock	PerF	Wide	Rep	?	Schelz et al. (2006)	NA	
Polypodiaceae (Adiantaceae)	<i>Adiantum capillus-veneris</i>		southern maidenhair fern	Fern	Wide	Pres	Rare	Heil, Porter, & Fleming 5971 (CANY)	1964	
Polypodiaceae (Aspleniaceae)	<i>Asplenium resiliens</i>		ebony spleenwort	Fern	Periph	Pres	Rare	O'Kane & Carulli 3295 (BRY)	1988	
Polypodiaceae (Adiantaceae)	<i>Cheilanthes feei</i>		slender lip-fern	Fern	Wide	Pres	Unc	Belnap 153 (CANY)	1987	
Polypodiaceae (Adiantaceae)	<i>Pellaea glabella</i> var. <i>occidentalis</i>	<i>P. occidentalis</i>	western cliffbrake	Fern	Periph	Pres	Unc	Boschen PE88-14-84 (CANY)	1984	
Polypodiaceae (Adiantaceae)	<i>Pellaea limitanea</i>	<i>Argyrochosma limitanea</i> ssp. <i>limitanea</i> , <i>Notholanea limitanea</i>	border cloak-fern	Fern	Periph	Pres	Rare	Heil & Fleming 6093 (CANY)	1990	
Portulacaceae	<i>Portulaca oleracea</i>		common purslane	AnnF	Intro	Pres	Unc	Moran s.n. (CANY)	2007	Native to E North America
Portulacaceae	<i>Talinum brevifolium</i>	<i>Pheimeranthus brevifolius</i>	sausageleaf talinum	PerF	Wide	Pres	Unc	Heil, Porter, & Fleming 5922 (CANY)	1983	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Primulaceae	<i>Primula specuicola</i>		cave primrose	PerF	RegEn	Pres	Unc	Debolt 227 (CANY)	1983	Type locality is along San Juan River near Bluff, San Juan Co., UT (Rydberg 9882 NY). USFW5: 3C
Ranunculaceae (Helleboraceae)	<i>Aquilegia micrantha</i>		alcove columbine	PerF	RegEn	Pres	Unc	Fowler & May 1626 (CANY)	1978	Type locality is Bluff, San Juan Co., UT (Wetherill s.n. CAS)
Ranunculaceae	<i>Clematis columbiana</i>	<i>C. pseudoalpina</i> , <i>Atragene columbiana</i>	Columbian virgin's-bower	PerF	Wide	Pres	Unc	Belnap 413 (CANY)	1987	
Ranunculaceae	<i>Clematis ligusticifolia</i>		white virgin's-bower	PerF	Wide	Pres	Unc	Welsh, Moore & Olsen 3679 (CANY)	1964	
Ranunculaceae (Helleboraceae)	<i>Delphinium andersonii</i> var. <i>scaposum</i>	<i>D. scaposum</i>	pale larkspur	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2896 (CANY)	1964	
Ranunculaceae (Helleboraceae)	<i>Delphinium nuttallianum</i>	<i>D. nelsonii</i>	Nuttall's larkspur	PerF	Wide	Pres	Unc	Allen 118 (CANY)	1978	
Ranunculaceae	<i>Ranunculus cymbalaria</i>	<i>Halerpestes cymbalaria</i> ssp. <i>saximontana</i> , <i>R. cymbalaria</i> var. not recognized in <i>Flora of North America</i> (1997)	marsh buttercup	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2988 (CANY)	1964	
Ranunculaceae	<i>Ranunculus testiculatus</i>	<i>Ceratocephala orthoceras</i> , <i>C. testiculata</i>	bur buttercup	AnnF	Intro	Rep	?	Schelz et al. (2006)	NA	Native to Eurasia

*Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.*

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Rhamnaceae	<i>Ceanothus greggii</i> var. <i>franklinii</i>		Franklin's desert-lilac	Shrub	LocEn	Pres	Unc	Debolt 1983 (CANY)	1978	Type locality is Muley Point, San Juan Co., UT (Welsh, Welsh, & Welsh 22244 BRY)
Rhamnaceae	<i>Rhamnus betulifolia</i>	<i>Frangula betulifolia</i>	birchleaf buckthorn	Shrub	Wide	Pres	Unc	Welsh 5385 (CANY)	1964	
Rosaceae	<i>Amelanchier utahensis</i>		Utah serviceberry	Shrub	Wide	Pres	Com	Welsh, Moore & Canter 2909 (CANY)	1964	Type locality is Toquerville, Washington Co., UT (Jones 1716 GH)
Rosaceae	<i>Cercocarpus intricatus</i>	<i>C. ledifolius</i> var. <i>intricatus</i>	dwarf mountain mahogany	Shrub	Wide	Pres	Com	Heil, Porter, & Fleming 6004 (CANY)	1978	Type locality is American Fork Canyon, Utah Co., UT (Watson 314 US)
Rosaceae	<i>Cercocarpus ledifolius</i> var. <i>intermontanus</i>	<i>C. ledifolius</i> var. <i>intercedens</i>	curl-leaf mountain mahogany	Shrub	Wide	Rep	?	Schelz et al. (2006)	NA	Type locality is ca 10 km E of Oak City, Millard Co., UT (Holmgren & Holmgren 11298 NY)
Rosaceae	<i>Cercocarpus montanus</i>		alder-leaf mountain mahogany	Shrub	Wide	Pres	Unc	Welsh, Moore & Canter 2917 (CANY)	1964	
Rosaceae	<i>Coleogyne ramosissima</i>		blackbrush	Shrub	Wide	Pres	Com	Welsh, Moore & Canter 2880 (CANY)	1964	
Rosaceae	<i>Fallugia paradoxa</i>		Apache plume	Shrub	Wide	Pres	Unc	Heil, Porter, & Fleming 5962 (CANY)	1990	
Rosaceae	<i>Holodiscus dumosus</i>	<i>H. discolor</i>	bush oceanspray	Shrub	Wide	Pres	Unc	Belnap 485 (CANY)	1987	
Rosaceae	<i>Petrophyton caespitosum</i>	<i>Spiraea caespitosa</i>	rock spiraea	Perf	Wide	Pres	Unc	Debolt 236 (CANY)	1983	



Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Rosaceae	<i>Physocarpus alternans</i>		dwarf ninebark	Shrub	Wide	Pres	Unc	Heil, Porter, & Fleming 5948 (CANY)	1990	
Rosaceae	<i>Potentilla paradoxa</i>	<i>P. supina</i> ssp. <i>paradoxa</i>	bushy cinquefoil	AnnF	Wide	Pres	Unc	Chrobak-Cox s.n. (CANY)	1986	
Rosaceae	<i>Potentilla rivalis</i>		brook cinquefoil	AnnF	Sparse	Pres	Rare	Schelz 2002-0523.01 (CANY)	2002	
Rosaceae	<i>Prunus persica</i>		peach	Tree	Intro	Rep	NA	Schelz et al. (2006)	NA	Native to China
Rosaceae	<i>Prunus virginiana</i> var. <i>melanocarpa</i>	<i>Padus virginiana</i> ssp. <i>melanocarpa</i>	western chokecherry	Shrub	Wide	Pres	Unc	Belnap 36 (CANY)	1979	
Rosaceae	<i>Purshia mexicana</i> var. <i>stansburyana</i>	<i>P. stansburyana</i> , <i>Cowania mexicana</i>	cliff-rose	Shrub	Wide	Pres	Unc	Welsh, Moore & Canter 2895 (CANY)	1964	
Rosaceae	<i>Rosa woodsii</i>	<i>R. woodsii</i> var. <i>ultramontana</i> . Includes <i>R. manca</i>	Woods' rose	Shrub	Wide	Pres	Unc	Welsh, Moore & Canter 2963 (CANY)	1964	
Rubiaceae	<i>Galium multiflorum</i> var. <i>coloradoense</i>	<i>G. coloradoense</i>	Colorado bedstraw	PerF	RegEn	Pres	Unc	Welsh, Moore & Canter 2932 (CANY)	1964	
Rubiaceae	<i>Galium multiflorum</i> var. <i>multiflorum</i>	<i>G. multiflorum</i>	shrubby bedstraw	PerF	Wide	Pres	Unc	Fowler & May 1571 (CANY)	1993	
Salicaceae	<i>Populus alba</i>		white poplar	Tree	Intro	Rep	?	Schelz et al. (2006)	NA	Native to Eurasia
Salicaceae	<i>Populus fremontii</i> var. <i>fremontii</i>	<i>P. deltoides</i> var. <i>fremontii</i>	Fremont cottonwood	Tree	Wide	Pres	Unc	Welsh & Moore 3855 (CANY)	1964	
Salicaceae	<i>Populus x intercurrents</i>	<i>P. acuminata</i> , <i>P. x acuminata</i> . Hybrid of <i>P. fremontii</i> x <i>P. angustifolia</i>	lance-leaf cottonwood	Tree	Wide	Pres	Unc	Welsh, Moore & Olsen 3749 (CANY)	1964	Type locality is Jesse Ewing Canyon, Daggett Co., UT (Goodrich 24441 BRY)
Salicaceae	<i>Salix bebbiana</i>		Bebb's willow	Shrub	Wide	Pres	Unc	Welsh, Moore & Olsen 3748 (CANY)	1964	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Salicaceae	<i>Salix eriocephala</i> var. <i>ligulifolia</i>	<i>S. ligulifolia</i>	strapleaf willow	Shrub	Wide	Pres	Rare	Fertig 22635 (CANY)	2006	
Salicaceae	<i>Salix eriocephala</i> var. <i>watsonii</i>	<i>S. lutea</i> , <i>S. rigida</i> var. <i>watsonii</i>	yellow willow	Shrub	Wide	Pres	Unc	Schelz s.n. (CANY)	1997	
Salicaceae	<i>Salix exigua</i> var. <i>stenophylla</i>	<i>S. exigua</i> var. <i>exigua</i>	coyote willow	Shrub	Wide	Pres	Unc	Welsh, Moore & Canter 2940 (CANY)	1964	
Salicaceae	<i>Salix gooddingii</i>	<i>S. nigra</i> var. <i>vallicola</i>	Goodding's black willow	Tree	Wide	Pres	Unc	Belnap 275 (CANY)	1964	
Santalaceae	<i>Comandra umbellata</i> var. <i>pallida</i>	<i>C. pallida</i>	bastard toadflax	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2842 (CANY)	1964	
Saxifragaceae (Hydrangeaceae)	<i>Fendlera rupicola</i>	<i>F. falcata</i>	fendlerbush	Shrub	Wide	Pres	Unc	Belnap 159 (CANY)	1964	
Saxifragaceae (Hydrangeaceae)	<i>Philadelphus microphyllus</i>	<i>P. microphyllus</i> var. <i>occidentalis</i> , <i>P. occidentalis</i> var. <i>occidentalis</i>	littleleaf mock-orange	Shrub	Wide	Pres	Unc	Welsh, Moore & Canter 2935 (CANY)	1964	
Saxifragaceae (Grossulariaceae)	<i>Ribes aureum</i>	<i>R. aureum</i> var. <i>aureum</i>	golden currant	Shrub	Wide	Pres	Unc	Fleming 866 (CANY)	1983	
Scrophulariaceae	<i>Castilleja chromosa</i>	<i>C. angustifolia</i> var. <i>dubia</i> , <i>C. applegatei</i> ssp. <i>martinii</i>	desert paintbrush	PerF	Wide	Pres	Unc	Belnap 102 (CANY)	1987	
Scrophulariaceae	<i>Castilleja flava</i>	<i>C. flava</i> var. <i>flava</i>	yellow paintbrush	PerF	Wide	Rep	?	Schelz et al. (2006)	NA	
Scrophulariaceae	<i>Castilleja linariifolia</i>	<i>C. linariaefolia</i>	Wyoming paintbrush	PerF	Wide	Pres	Unc	Fowler & May 1567 (CANY)	1964	
Scrophulariaceae	<i>Castilleja scabrida</i> var. <i>scabrida</i>		Eastwood's paintbrush	PerF	RegEn	Pres	Unc	Belnap 198 (CANY)	1983	
Scrophulariaceae	<i>Cordylanthus wrightii</i>		Wright's bird's-beak	AnnF	Wide	Pres	Unc	Chrobak 584 (CANY)	1984	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Scrophulariaceae	<i>Mimulus eastwoodiae</i>		Eastwood's monkey-flower	PerF	RegEn	Pres	Unc	Heil & Fleming 6191 (CANY)	1983	Type locality is San Juan River near Bluff, San Juan Co., UT (Rydborg 9883 NY)
Scrophulariaceae	<i>Pedicularis centranthera</i>		dwarf lousewort	PerF	Wide	Pres	Rare	Anderson s.n. (BRY)	1983	
Scrophulariaceae	<i>Penstemon comarrhenus</i>		dusty penstemon	PerF	RegEn	Pres	Unc	Allen 203 (CANY)	1978	Type locality is Aquarius Plateau, Garfield Co., UT (Ward 462 GH)
Scrophulariaceae	<i>Penstemon cyanocaulis</i>		bluestem penstemon	PerF	RegEn	Pres	Unc	Fleming 807 (CANY)	1979	
Scrophulariaceae	<i>Penstemon eatonii</i> var. <i>undosus</i>		undulate penstemon	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2912 (CANY)	1964	Type locality is St. George, Washington Co., UT (Jones 5110h US)
Scrophulariaceae	<i>Penstemon palmeri</i> var. <i>palmeri</i>		Palmer's penstemon	PerF	Wide	Pres	Unc	Chrobak-Cox s.n. (CANY)	1987	
Scrophulariaceae	<i>Penstemon utahensis</i>		Utah penstemon	PerF	Wide	Pres	Unc	Moore 292 (BRY)	1965	Type locality is between Hatch's Wash & Monticello, San Juan Co., UT (Eastwood s.n. CAS)
Scrophulariaceae	<i>Verbascum thapsus</i>		woolly mullein	PerF	Intro	Rep	1989	Schelz et al. (2006)	NA	Native to Eurasia
Scrophulariaceae	<i>Veronica anagallis-aquatica</i>		water speedwell	PerF	Intro	Pres	Unc	Schelz s.n. (CANY)	2002	Native to Europe
Solanaceae	<i>Chamaesaracha coronopus</i>		false nightshade	PerF	Periph	Pres	Rare	Mann s.n. (CANY)	2007	

**Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Solanaceae	<i>Datura wrightii</i>	<i>D. meteloides</i>	angel's trumpet	AnnF	Wide	Pres	Unc	Welsh, Moore & Canter 2943 (CANY)	1964	
Solanaceae	<i>Lycium andersonii</i>		Anderson's wolfberry	Shrub	Wide	Pres	Unc	Welsh 22639 (CANY)	1983	
Solanaceae	<i>Lycium pallidum</i>		pale wolfberry	Shrub	Wide	Rep	?	Schelz et al. (2006)	NA	
Solanaceae	<i>Lycium torreyi</i>		Torrey's wolfberry	Shrub	Wide	Pres	Unc	Chrobak 592 (CANY)	1983	
Solanaceae	<i>Nicotiana trigonophylla</i>	<i>N. obtusifolia</i> , <i>N. trigonophylla</i> var. <i>palmeri</i>	desert tobacco	AnnF	Wide	Pres	Unc	Allen 197 (CANY)	1978	
Solanaceae	<i>Physalis hederifolia</i> var. <i>fendleri</i>	<i>P. fendleri</i> , <i>P. hederifolia</i> var. <i>cordifolia</i> , <i>P. hederiaefolia</i> var. <i>fendleri</i>	Fendler's ground-cherry	PerF	Wide	Pres	Unc	Welsh, Moore & Olsen 3746 (CANY)	1964	
Solanaceae	<i>Physalis longifolia</i>	<i>P. virginiana</i> var. <i>sonorae</i>	long-leaf ground-cherry	PerF	Wide	Rep	NA	Schelz et al. (2006)	NA	
Solanaceae	<i>Solanum jamesii</i>		James' potato	PerF	Periph	Pres	Rare	Moran s.n. (CANY)	2007	
Solanaceae	<i>Solanum rostratum</i>		buffalobur	AnnF	Intro	Rep	?	Schelz et al. (2006)	NA	Native to C North America
Solanaceae	<i>Solanum triflorum</i>		cut-leaf nightshade	AnnF	Wide	Rep	1991	Schelz et al. (2006)	NA	Native to C North America, may be adventive in UT.
Tamaricaceae	<i>Tamarix chinensis</i>	<i>T. pentandra</i> , <i>T. ramosissima</i>	five-stamen tamarisk	Shrub	Intro	Pres	Com	Welsh, Moore & Canter 2851 (CANY)	1964	Native to Eurasia
Typhaceae	<i>Typha domingensis</i>		southern cattail	PerG	Wide	Pres	Unc	Welsh, Moore & Olsen 3772 (CANY)	1964	
Typhaceae	<i>Typha latifolia</i>		broad-leaved cattail	PerG	Wide	Pres	Unc	Fleming 862 (CANY)	1989	

Appendix A. Confirmed, historical, and reported vascular plant taxa of Canyonlands National Park, organized by family and scientific name with taxonomic and biogeographic notes, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Pop. size	Source	Year doc.	Comments
Ulmaceae (Celtidaceae)	<i>Celtis reticulata</i>	<i>C. laevigata</i> var. <i>reticulata</i>	netleaf hackberry	Tree	Wide	Pres	Unc	Welsh 21813 (CANY)	1964	
Ulmaceae	<i>Ulmus pumila</i>		Siberian elm	Tree	Intro	Rep	Rare	Loope (1977), Dewey & Andersen (2005)	2004	Native to Asia
Umbelliferae (Apiaceae)	<i>Cymopterus acaulis</i> var. <i>fendleri</i>	<i>C. fendleri</i> , <i>C. glomeratus</i>	Fendler's cymopterus	PerF	Wide	Pres	Unc	Welsh 21803 (CANY)	1983	
Umbelliferae (Apiaceae)	<i>Cymopterus bulbosus</i>		onion spring-parsley	PerF	Wide	Rep	?	Scholz et al. (2006)	NA	
Umbelliferae (Apiaceae)	<i>Cymopterus newberryi</i>		sticky spring-parsley	PerF	RegEn	Pres	Unc	Johnson 44 (CANY)	1979	
Umbelliferae (Apiaceae)	<i>Cymopterus purpureus</i> var. <i>purpureus</i>	<i>C. purpureus</i>	Colorado Plateau spring-parsley	PerF	RegEn	Pres	Unc	Scholz s.n. (CANY)	1997	
Umbelliferae (Apiaceae)	<i>Cymopterus terebinthinus</i> var. <i>petraeus</i>	<i>C. petraeus</i> , <i>Aletes petraea</i> , <i>Pteryxia petraea</i>	rock spring-parsley	PerF	Wide	Pres	Unc	Fleming 788 (CANY)	1983	
Umbelliferae (Apiaceae)	<i>Lomatium parryi</i>		Parry's lomatium	PerF	Wide	Pres	Unc	Welsh, Moore & Canter 2891 (CANY)	1964	Type locality is "Southern Utah" (Parry 85)
Verbenaceae	<i>Phyla cuneifolia</i>	<i>Lippia cuneifolia</i>	wedge-leaf fog-fruit	PerF	Sparse	Pres	Unc	Belnap 353 (CANY)	1979	
Verbenaceae	<i>Verbena bracteata</i>		prostrate vervain	PerF	Wide	Pres	Unc	Chrobak-Cox s.n. (CANY)	1985	
Viscaceae	<i>Arceuthobium divaricatum</i>		pinyon dwarf-mistletoe	PerF	Wide	Pres	Unc	Fertig 22633 (CANY)	2006	Typically parasitic on <i>Pinus edulis</i> and <i>P. monophylla</i>
Viscaceae	<i>Phoradendron juniperinum</i>		juniper mistletoe	PerF	Wide	Pres	Unc	Welsh & Moore 3830 (CANY)	1964	Typically parasitic on <i>Juniperus osteosperma</i>
Zygophyllaceae	<i>Kallstroemia californica</i>		yellow kallstroemia	AnnF	Periph	Pres	Rare	Belnap 365 (CANY)	1987	
Zygophyllaceae	<i>Tribulus terrestris</i>		puncture vine	AnnF	Intro	Pres	Unc	Chrobak-Cox s.n. (CANY)	1988	Native to Eurasia

Appendix B. Potential (unconfirmed) taxa of Canyonlands National Park.

Family	Species name	Synonyms/Taxonomic notes	Common name	Life form	Range	Comments
Alismataceae	<i>Sagittaria cuneata</i>		northern arrowhead	PerF	Wide	
Asclepiadaceae	<i>Asclepias cryptoceras</i> var. <i>cryptoceras</i>		pallid milkweed	PerF	Wide	
Asclepiadaceae	<i>Asclepias cutleri</i>		Cutler's milkweed	PerF	RegEn	USFWS: Category 3C
Asclepiadaceae	<i>Asclepias involucreta</i>		dwarf milkweed	PerF	Periph	
Boraginaceae	<i>Cryptantha cinerea</i> var. <i>jamesii</i>	<i>C. jamesii</i> , <i>Oreocarya suffruticosa</i>	James' cryptanth	PerF	Wide	
Boraginaceae	<i>Cryptantha circumscissa</i>		cushion cryptanth	AnnF	Wide	
Boraginaceae	<i>Cryptantha fendleri</i>		sand dune cryptanth	AnnF	Wide	
Boraginaceae	<i>Cryptantha inaequata</i>	<i>C. holoptera</i> . Included in <i>C. angustifolia</i> by some authors	unequal cryptanth	AnnF	Periph	
Boraginaceae	<i>Cryptantha nevadensis</i>		Nevada cryptanth	AnnF	Periph	
Boraginaceae	<i>Cryptantha pterocarya</i> var. <i>cycloptera</i>		wing-nut cryptanth	AnnF	Periph	
Boraginaceae	<i>Lappula occidentalis</i> var. <i>occidentalis</i>	<i>L. redowskii</i> var. <i>redowskii</i>	western stickseed	AnnF	Wide	
Cactaceae	<i>Opuntia erinacea</i> var. <i>erinacea</i>	<i>O. polyacantha</i> var. <i>erinacea</i>	common pricklypear	PerF	Wide	
Cactaceae	<i>Opuntia nicholii</i>	<i>O. polyacantha</i> var. <i>nicholii</i>	Nichol's pricklypear	PerF	LocEn	
Cactaceae	<i>Opuntia polyacantha</i> var. <i>rufispina</i>	Included in <i>O. polyacantha</i> var. <i>polyacantha</i> in <i>Flora of North America</i> (2003)	rufous-spine pricklypear	PerF	Wide	
Cactaceae	<i>Opuntia polyacantha</i> var. <i>trichophora</i>	Included in <i>O. polyacantha</i> var. <i>polyacantha</i> in <i>Flora of North America</i> (2003)	slenderspine pricklypear	PerF	Periph	
Campanulaceae	<i>Lobelia cardinalis</i> ssp. <i>graminea</i>		cardinal-flower	PerF	Periph	
Chenopodiaceae	<i>Allenrolfea occidentalis</i>		iodine bush	Shrub	Wide	
Chenopodiaceae	<i>Atriplex corrugata</i>		mat saltbush	Shrub	RegEn	
Chenopodiaceae	<i>Atriplex graciliflora</i>		Blue Valley orach	AnnF	RegEn	
Chenopodiaceae	<i>Atriplex saccaria</i> var. <i>saccaria</i>	<i>A. saccaria</i> var. <i>caput-medusae</i>	stalked orach	AnnF	RegEn	
Chenopodiaceae	<i>Chenopodium album</i> var. <i>berlandieri</i>	<i>C. berlandieri</i> var. <i>zschackei</i>	pitseed goosefoot	AnnF	Wide	
Chenopodiaceae	<i>Chenopodium desiccatum</i>	<i>C. pratericola</i>	desert goosefoot	AnnF	Sparse	

Appendix B. Potential (unconfirmed) taxa of Canyonlands National Park, cont.

Family	Species name	Synonyms/Taxonomic notes	Common name	Life form	Range	Comments
Chenopodiaceae	<i>Chenopodium glaucum</i> var. <i>salinum</i>	<i>C. salinum</i>	oakleaf goosefoot	AnnF	Wide	
Commelinaceae	<i>Tradescantia occidentalis</i>	<i>T. occidentalis</i> var. <i>occidentalis</i>	western spiderwort	PerF	Wide	
Compositae (Asteraceae)	<i>Ambrosia artemisiifolia</i>	<i>A. artemisiifolia</i> var. <i>elatio</i> r	common ragweed	AnnF	Wide	
Compositae (Asteraceae)	<i>Antennaria microphylla</i>	Includes <i>A. rosea</i>	small-leaf pussyoes	PerF	Wide	
Compositae (Asteraceae)	<i>Artemisia carruthii</i>		Carruth's wormwood	PerF	Wide	
Compositae (Asteraceae)	<i>Artemisia tridentata</i> var. <i>wyomingensis</i>	<i>Seriphidium tridentatum</i> ssp. <i>wyomingense</i>	Wyoming big sagebrush	Shrub	Wide	
Compositae (Asteraceae)	<i>Aster laevis</i>	<i>A. laevis</i> var. <i>geyeri</i> , <i>Symphotrichum laeve</i> , <i>S. laeve</i> var. <i>geyeri</i>	smooth aster	PerF	Periph	
Compositae (Asteraceae)	<i>Aster pauciflorus</i>	<i>Almutaster pauciflorus</i>	alkali aster	PerF	Wide	
Compositae (Asteraceae)	<i>Aster welshii</i>	<i>Symphotrichum welshii</i>	Welsh's aster	PerF	LocEn	
Compositae (Asteraceae)	<i>Baccharis glutinosa</i>	Included in <i>B. salicina</i> by some authors	sticky seepwillow	Shrub	Wide	
Compositae (Asteraceae)	<i>Bidens frondosa</i>		devil's- beggarsticks	PerF	Wide	
Compositae (Asteraceae)	<i>Chrysothamnus depressus</i>		dwarf rabbitbrush	Shrub	Wide	
Compositae (Asteraceae)	<i>Chrysothamnus nauseosus</i> var. <i>arenarius</i>	<i>Ericameria nauseosa</i> var. <i>arenaria</i>	sand rabbitbrush	Shrub	RegEn	
Compositae (Asteraceae)	<i>Chrysothamnus nauseosus</i> var. <i>bigelovii</i>	<i>Ericameria nauseosa</i> var. <i>bigelovii</i>	Bigelow's rabbitbrush	Shrub	RegEn	
Compositae (Asteraceae)	<i>Chrysothamnus nauseosus</i> var. <i>speciosus</i>	<i>C. nauseosus</i> var. <i>albicaulis</i> , <i>Ericameria nauseosa</i> var. <i>speciosa</i>	whitestem rabbitbrush	Shrub	Wide	
Compositae (Asteraceae)	<i>Chrysothamnus pulchellus</i> var. <i>baileyi</i>	<i>Ericameria pulchella</i> , <i>C. baileyi</i>	pretty rabbitbrush	Shrub	Periph	
Compositae (Asteraceae)	<i>Chrysothamnus viscidiflorus</i> var. <i>lanceolatus</i>		lanceleaf rabbitbrush	Shrub	Wide	
Compositae (Asteraceae)	<i>Cichorium intybus</i>		chicory	PerF	Intro	Native to Eurasia
Compositae (Asteraceae)	<i>Enceliopsis nutans</i>		noddinghead	PerF	RegEn	
Compositae (Asteraceae)	<i>Erigeron divergens</i> var. <i>cinereus</i>	<i>E. colomexicanus</i>	spreading daisy	PerF	Wide	
Compositae (Asteraceae)	<i>Flaveria campestris</i>		marshweed	AnnF	Sparse	
Compositae (Asteraceae)	<i>Gaillardia pulchella</i>		firewheel blanketflower	AnnF	Intro	
Compositae (Asteraceae)	<i>Haplopappus spinulosus</i> var. <i>paradoxus</i>	<i>Machaearanthera pinnatifida</i> var. <i>paradoxa</i>	spiny goldenweed	PerF	RegEn	

Appendix B. Potential (unconfirmed) taxa of Canyonlands National Park, cont.

Family	Species name	Synonyms/Taxonomic notes	Common name	Life form	Range	Comments
Compositae (Asteraceae)	<i>Helianthus anomalus</i>	Includes <i>H. deserticola</i>	sand sunflower	AnnF	RegEn	
Compositae (Asteraceae)	<i>Layia glandulosa</i>		tidytips	AnnF	Wide	
Compositae (Asteraceae)	<i>Lygodesmia grandiflora</i> var. <i>arizonica</i>	<i>L. arizonica</i>	Arizona rush-pink	PerF	RegEn	
Compositae (Asteraceae)	<i>Lygodesmia grandiflora</i> var. <i>entrata</i>	<i>L. entrata</i> , considered a synonym of var. <i>dianthopsis</i> by some authors	Entrada rush-pink	PerF	LocEn	UT BLM Sensitive, USFWS: former C2 Candidate.
Compositae (Asteraceae)	<i>Lygodesmia spinosa</i>	<i>Stephanomeria spinosa</i> , <i>Pleiacanthus spinosus</i>	thorny wire-lettuce	AnnF	Wide	
Compositae (Asteraceae)	<i>Machaeranthera canescens</i> var. <i>leucanthemifolia</i>	<i>M. leucanthemifolia</i>	thickleaf aster	PerF	RegEn	
Compositae (Asteraceae)	<i>Perityle specuicola</i>		alcove rock-daisy	PerF	LocEn	UT BLM Sensitive, USFWS: former C2 Candidate.
Compositae (Asteraceae)	<i>Psathyrotes pilifera</i>		piliferous turtleback	AnnF	RegEn	
Compositae (Asteraceae)	<i>Psilostrophe sparsiflora</i>		greenstem paperflower	PerF	RegEn	
Compositae (Asteraceae)	<i>Psilostrophe tagetina</i>		woolly paperflower	PerF	Periph	
Compositae (Asteraceae)	<i>Senecio streptanthifolius</i> var. <i>streptanthifolius</i>	<i>Packera streptanthifolia</i> var. <i>streptanthifolia</i> , includes vars. <i>borealis</i> & <i>oodes</i>	Rocky Mountain groundsel	PerF	Wide	
Compositae (Asteraceae)	<i>Stylocline micropoides</i>		desert nest-straw	AnnF	Periph	
Compositae (Asteraceae)	<i>Thymophylla acerosa</i>	<i>Dyssodia acerosa</i>	dogweed	PerF	Wide	
Compositae (Asteraceae)	<i>Townsendia beamanii</i>		Beaman's townsendia	AnnF	LocEn	
Compositae (Asteraceae)	<i>Wyethia scabra</i>	<i>Scabrethia scabra</i> ssp. <i>scabra</i>	rough mule's-ears	PerF	Wide	
Convolvulaceae (Cuscutaceae)	<i>Cuscuta pentagona</i>		field dodder	AnnF	Wide	
Convolvulaceae	<i>Evolvulus nuttallianus</i>		evolvulus	PerF	Wide	
Cruciferae (Brassicaceae)	<i>Arabis holboellii</i> var. <i>secunda</i>	<i>A. holboellii</i> var. <i>retrofracta</i> , <i>Boechea holboellii</i> var. <i>secunda</i> , <i>B. retrofracta</i>	Holboell's rockcress	PerF	Wide	
Cruciferae (Brassicaceae)	<i>Arabis thompsonii</i>	<i>Boechea thompsonii</i>	Thompson's rockcress	PerF	LocEn	
Cruciferae (Brassicaceae)	<i>Descurainia pinnata</i> var. <i>filipes</i>	<i>D. incisa</i> var. <i>filipes</i>	western tansy-mustard	AnnF	Wide	
Cruciferae (Brassicaceae)	<i>Descurainia pinnata</i> var. <i>nelsonii</i>		western tansy-mustard	AnnF	Wide	



Appendix B. Potential (unconfirmed) taxa of Canyonlands National Park, cont.

Family	Species name	Synonyms/Taxonomic notes	Common name	Life form	Range	Comments
Cruciferae (Brassicaceae)	<i>Descurainia pinnata</i> var. <i>paysonii</i>	<i>D. incisa</i> var. <i>paysonii</i>	Payson's tansymustard	AnnF	Periph	
Cruciferae (Brassicaceae)	<i>Hutchinsia procumbens</i>	<i>Hornungia procumbens</i> , <i>Hymenolobus procumbens</i>	ovalpurse	AnnF	Wide	
Cruciferae (Brassicaceae)	<i>Lepidium densiflorum</i> var. <i>densiflorum</i>		prairie pepperwort	AnnF	Wide	
Cruciferae (Brassicaceae)	<i>Lepidium lasiocarpum</i> var. <i>lasiocarpum</i>		hairy-pod pepperwort	AnnF	Wide	
Cruciferae (Brassicaceae)	<i>Physaria fendleri</i>	<i>Lesquerella fendleri</i>	Fendler's bladderpod	PerF	Periph	
Cruciferae (Brassicaceae)	<i>Schoenocrambe limifolia</i>	<i>Sisymbrium limifolium</i>	flax-leaved plainsmustard	PerF	Wide	
Cruciferae (Brassicaceae)	<i>Stanleya integrifolia</i>	<i>S. pinnata</i> var. <i>integrifolia</i>	smoothleaf prince's-plume	PerF	Wide	
Cupressaceae	<i>Juniperus scopulorum</i>	<i>Sabina scopulorum</i>	Rocky Mountain juniper	Tree	Wide	
Cyperaceae	<i>Carex curatorum</i>	<i>C. scirpoidea</i> var. <i>curatorum</i>	Canyonlands sedge	PerG	RegEn	USFWS: Category 3C
Cyperaceae	<i>Carex hystericina</i>	<i>C. hystericina</i>	bottlebrush sedge	PerG	Wide	
Cyperaceae	<i>Cyperus squarrosus</i>	<i>C. aristatus</i>	bearded flat-sedge	AnnG	Wide	
Cyperaceae	<i>Fimbristylis spadicea</i>	<i>F. thermalis</i>	hot springs fimbriatylis	PerG	Sparse	
Cyperaceae	<i>Scirpus maritimus</i>	<i>Scirpus maritimus</i> var. <i>paludosus</i> , <i>Schoenoplectus maritimus</i> , <i>Bolboschoenus maritimus</i> var. <i>paludosus</i>	alkali bulrush	PerG	Wide	
Euphorbiaceae	<i>Chamaesyce micromeria</i>	<i>Euphorbia micromeria</i>	tiny spurge	AnnF	Wide	
Euphorbiaceae	<i>Chamaesyce serpyllifolia</i>	<i>Euphorbia serpyllifolia</i>	thyme-leaved spurge	AnnF	Wide	
Euphorbiaceae	<i>Croton texensis</i> var. <i>utahensis</i>		Utah dove-weed	AnnF	RegEn	
Fagaceae	<i>Quercus gambelii</i> var. <i>bonina</i>		Goodhope oak	Tree	LocEn	
Fagaceae	<i>Quercus x eastwoodiae</i>		Eastwood's oak	Shrub	RegEn	
Gentianaceae	<i>Centaurium calycosum</i>	<i>C. arizonicum</i>	Buckley's centaury	AnnF	Periph	
Gentianaceae	<i>Centaurium exaltatum</i>		Great Basin centaury	PerF	Wide	
Gramineae (Poaceae)	<i>Aegilops cylindrica</i>	<i>Cylindropyrum cylindricum</i>	jointed goatgrass	AnnG	Intro	Native to Eurasia
Gramineae (Poaceae)	<i>Bothriochloa ischaemum</i>	<i>B. ischaemum</i> var. <i>songarica</i>	yellow bluestem	PerG	Intro	Occurs along entrance road leading into ISKY, just outside of CANY boundary.
Gramineae (Poaceae)	<i>Bothriochloa springfieldii</i>		Springfield's bluestem	PerG	Sparse	

Appendix B. Potential (unconfirmed) taxa of Canyonlands National Park, cont.

Family	Species name	Synonyms/Taxonomic notes	Common name	Life form	Range	Comments
Gramineae (Poaceae)	<i>Cenchrus longispinus</i>		field sandbur	AnnG	Wide	
Gramineae (Poaceae)	<i>Elymus cinereus</i>	<i>Leymus cinereus</i>	Great Basin wildrye	PerG	Wide	
Gramineae (Poaceae)	<i>Eragrostis pectinacea</i>		tufted lovegrass	AnnG	Wide	
Gramineae (Poaceae)	<i>Lycurus phleoides</i>	<i>L. setosus</i>	wolftail	PerG	Wide	
Gramineae (Poaceae)	<i>Muhlenbergia racemosa</i>		green muhly	PerG	Wide	
Gramineae (Poaceae)	<i>Oryzopsis exigua</i>	<i>Piptatherum exiguum</i>	little ricegrass	PerG	Wide	
Gramineae (Poaceae)	<i>Polygonum interruptus</i>	Hybrid between <i>P. monspeliensis</i> and <i>Agrostis stolonifera</i>	ditch polypogon	PerG	Intro	
Gramineae (Poaceae)	<i>Puccinellia distans</i>		weeping alkaligrass	PerG	Intro	Native to Eurasia
Gramineae (Poaceae)	<i>Secale cereale</i>		cultivated rye	AnnG	Intro	Native to Eurasia
Gramineae (Poaceae)	<i>Sphenopholis obtusata</i>	<i>S. obtusata</i> var. <i>obtusata</i>	prairie wedgrass	PerG	Wide	
Hydrophyllaceae	<i>Nama retrorsum</i>		Howell's nama	AnnF	RegEn	USFWS: Category 3C
Juncaceae	<i>Juncus articulatus</i>		jointed rush	PerG	Sparse	
Juncaceae	<i>Juncus bufonius</i>	Includes vars. <i>bufonius</i> , <i>occidentalis</i> , <i>halophilus</i> , & <i>ambiguus</i>	toad rush	AnnG	Wide	
Juncaginaceae	<i>Triglochin maritima</i>	Includes <i>T. concinnum</i>	seaside arrowgrass	PerG	Wide	
Labiatae (Lamiaceae)	<i>Mentha arvensis</i> var. <i>glabrata</i>	<i>M. arvensis</i> var. <i>canadensis</i>	field mint	PerF	Wide	
Leguminosae (Fabaceae)	<i>Alhagi maurorum</i>		camel-thorn	PerF	Intro	Native to Asia
Leguminosae (Fabaceae)	<i>Astragalus bisulcatus</i> var. <i>haydenianus</i>	<i>A. haydenianus</i>	Hayden's milkvetch	PerF	Wide	
Leguminosae (Fabaceae)	<i>Astragalus eastwoodiae</i>		Eastwood's milkvetch	PerF	RegEn	
Leguminosae (Fabaceae)	<i>Astragalus flexuosus</i> var. <i>diehlii</i>		Diehl's milkvetch	PerF	RegEn	
Leguminosae (Fabaceae)	<i>Astragalus geyeri</i>	<i>A. geyeri</i> var. <i>geyeri</i>	Geyer's milkvetch	AnnF	Wide	
Leguminosae (Fabaceae)	<i>Astragalus pardalinus</i>		panther milkvetch	PerF	LocEn	USFWS Category 3C
Leguminosae (Fabaceae)	<i>Astragalus wingatanus</i>		Fort Wingate milkvetch	PerF	RegEn	
Leguminosae (Fabaceae)	<i>Astragalus zionis</i> var. <i>zionis</i>		Zion milkvetch	PerF	RegEn	
Leguminosae (Fabaceae, Caesalpinziaceae)	<i>Caesalpinia repens</i>	<i>Hoffmanseggia repens</i>	creeping rush-pea	PerF	RegEn	
Leguminosae (Fabaceae, Caesalpinziaceae)	<i>Cercis occidentalis</i> var. <i>orbiculata</i>	<i>C. orbiculata</i>	western redbud	Shrub	Wide	

Appendix B. Potential (unconfirmed) taxa of Canyonlands National Park, cont.

Family	Species name	Synonyms/Taxonomic notes	Common name	Life form	Range	Comments
Leguminosae (Fabaceae)	<i>Lupinus caudatus</i> var. <i>argophyllus</i>	<i>L. caudatus</i> , <i>L. argenteus</i> var. <i>argophyllus</i> , <i>L. caudatus</i> var. <i>cutleri</i>	silverleaf lupine	PerF	Wide	
Leguminosae (Fabaceae)	<i>Lupinus pusillus</i> var. <i>intermontanus</i>		Great Basin lupine	AnnF	Wide	
Leguminosae (Fabaceae)	<i>Lupinus pusillus</i> var. <i>rubens</i>	<i>L. rubens</i> , included in var. <i>pusillus</i> by some authors	blackbrush lupine	AnnF	Wide	
Leguminosae (Fabaceae)	<i>Oxytropis lambertii</i> var. <i>bigelovii</i>	Includes var. <i>lambertii</i>	Lambert's locoweed	PerF	Wide	
Leguminosae (Fabaceae)	<i>Parrvella filifolia</i>		narrow-leaf dunebroom	Shrub	RegEn	
Leguminosae (Fabaceae)	<i>Pediomelum aromaticum</i> var. <i>tuhyi</i>	Vars. not recognized in Barneby (1989).	Tuhy's breadroot	PerF	LocEn	UT BLM: Sensitive, USFWS: former C2 Candidate.
Leguminosae (Fabaceae)	<i>Psoralidium junceum</i>	<i>Psoralea juncea</i>	rush scurfpea	PerF	RegEn	
Leguminosae (Fabaceae)	<i>Psorathamnus fremontii</i>		Fremont's indigo-bush	Shrub	Wide	
Leguminosae (Fabaceae)	<i>Vicia americana</i> var. <i>americana</i>		American vetch	PerF	Wide	
Liliaceae (Calochortaceae)	<i>Calochortus gunnisonii</i>	<i>C. gunnisonii</i> var. <i>gunnisonii</i>	Gunnison's mariposa	PerF	Wide	
Onagraceae	<i>Epilobium angustifolium</i> var. <i>canescens</i>	<i>Chamerion angustifolium</i> var. <i>canescens</i> , <i>C. angustifolium</i> ssp. <i>circumvagum</i> , <i>C. danielisii</i>	fireweed	PerF	Wide	
Onagraceae	<i>Oenothera coronopifolia</i>		hairy-throat evening-primrose	PerF	Wide	
Onagraceae	<i>Oenothera elata</i>	<i>O. elata</i> ssp. <i>hirsutissima</i>	western evening-primrose	PerF	Wide	
Polygalaceae	<i>Polygala acanthoclada</i> var. <i>acanthoclada</i>	<i>P. acanthoclada</i>	thorny milkwort	Shrub	Periph	
Polygalaceae	<i>Polygala subspinosa</i>		cushion milkwort	PerF	Wide	Cox s.n. (CANY Cat # 45531) from just outside park near Horseshoe Canyon.
Polygonaceae	<i>Eriogonum corymbosum</i> var. <i>smithii</i>	<i>E. smithii</i>	flat top wild buckwheat	Shrub	LocEn	BLM Sensitive, USFWS: former C2 Candidate.
Polygonaceae	<i>Eriogonum flexum</i>	<i>Stenogonum flexum</i>	bent wild buckwheat	AnnF	RegEn	

Appendix B. Potential (unconfirmed) taxa of Canyonlands National Park, cont.

Family	Species name	Synonyms/Taxonomic notes	Common name	Life form	Range	Comments
Polygonaceae	<i>Eriogonum hookeri</i>		Hooker's wild buckwheat	AnnF	Wide	
Polygonaceae	<i>Eriogonum leptoclodon</i> var. <i>papiliunculi</i>	Misspelled in Welsh et al. (2003)	butterfly wild buckwheat	Shrub	RegEn	
Polygonaceae	<i>Eriogonum leptoclodon</i> var. <i>ramosissimum</i>		San Juan wild buckwheat	Shrub	RegEn	
Polygonaceae	<i>Eriogonum umbellatum</i> var. <i>umbellatum</i>		sulfur wild buckwheat	PerF	Wide	
Polygonaceae	<i>Polygonum aviculare</i>	<i>P. arenastrum</i> , <i>P. aviculare</i> ssp. <i>aviculare</i>	yard knotweed	AnnF	Intro	Native to Eurasia
Polypodiaceae (Aspleniaceae)	<i>Cystopteris bulbifera</i>		bulblet bladder fern	Fern	Periph	
Polypodiaceae (Aspleniaceae)	<i>Cystopteris fragilis</i>	Includes <i>C. utahensis</i> , <i>C. reevesiana</i> , & <i>C. tenuis</i> according to some authors	brittle bladder fern	Fern	Wide	
Polypodiaceae (Aspleniaceae)	<i>Cystopteris utahensis</i>	Included in <i>C. fragilis</i> by Welsh et al. (2003)	Utah bladder fern	Fern	RegEn	
Ranunculaceae	<i>Ranunculus scleratus</i> var. <i>multifidus</i>	<i>Hecatonia sclerata</i>	blister buttercup	AnnF	Wide	
Rhamnaceae	<i>Ceanothus fendleri</i>		Fendler's mountain-lilac	Shrub	Wide	
Rosaceae	<i>Purshia tridentata</i>		antelope bitterbrush	Shrub	Wide	
Rosaceae	<i>Rubus neomexicanus</i>		New Mexico thimbleberry	Shrub	Periph	
Salicaceae	<i>Populus fremontii</i> var. <i>wisizenii</i>	<i>P. deltoides</i> var. <i>wisizenii</i>	Rio Grande cottonwood	Tree	Periph	
Salicaceae	<i>Salix laevigata</i>		red willow	Shrub	Wide	
Scrophulariaceae	<i>Castilleja exilis</i>	<i>C. minor</i> ssp. <i>minor</i>	annual paintbrush	AnnF	Wide	
Scrophulariaceae	<i>Mimulus glabratus</i> var. <i>utahensis</i>		glabrous monkeyflower	PerF	Wide	
Scrophulariaceae	<i>Mimulus rubellus</i>		reddish monkeyflower	AnnF	Wide	
Scrophulariaceae	<i>Penstemon ambiguus</i> var. <i>laevissimus</i>	<i>Leiostemon ambiguus</i>	bush penstemon	PerF	Wide	
Scrophulariaceae	<i>Penstemon angustifolius</i> var. <i>venosus</i>	Sometimes confused with ssp. <i>caudatus</i> of WY & Great Plains	veined penstemon	PerF	RegEn	
Scrophulariaceae	<i>Penstemon breviculus</i>		shortest penstemon	PerF	RegEn	
Scrophulariaceae	<i>Penstemon moffatii</i>		Moffatt penstemon	PerF	RegEn	

**Appendix B. Potential (unconfirmed) taxa of Canyonlands National Park, cont.**

Family	Species name	Synonyms/Taxonomic notes	Common name	Life form	Range	Comments
Scrophulariaceae	<i>Penstemon palmeri</i> var. <i>eglandulosus</i>		Palmer's penstemon	PerF	RegEn	
Selaginellaceae	<i>Selaginella mutica</i>	<i>S. mutica</i> var. <i>mutica</i>	blunt-leaf spike-moss	Fern	Wide	
Solanaceae	<i>Nicotiana attenuata</i>		coyote tobacco	AnnF	Wide	
Solanaceae	<i>Physalis lobata</i>	<i>Quincula lobata</i>	purple ground-cherry	PerF	Disj	
Umbelliferae (Apiaceae)	<i>Cymopterus purpurascens</i>		basin white-cup spring-parsley	PerF	Wide	
Umbelliferae (Apiaceae)	<i>Lomatium latilobum</i>	<i>Aletes latilobus</i>	Canyonlands lomatium	PerF	LocEn	USFS Region 4 Sensitive, UT BLM Sensitive, USFWS: Former C2 candidate
Umbelliferae (Apiaceae)	<i>Oreoxis trotteri</i>	<i>Cymopterus trotteri</i>	Trotter's spring-parsley	PerF	LocEn	UT BLM Sensitive, USFWS: former C2 Candidate.
Valerianaceae	<i>Valeriana edulis</i>		tobacco-root	PerF	Wide	
Vitaceae	<i>Parthenocissus vitacea</i>		thicket-creeper	Shrub	Wide	

The vascular plant species listed here are known from the vicinity of Canyonlands NP, in Garfield, Grand, San Juan, and Wayne counties, Utah, but have not previously been reported or confirmed for the park. Species on this list are derived from a checklist of potential species for NCPN parks prepared by Dr. N. Duane Atwood, of Brigham Young University, in 2001, and the *Atlas of the Vascular Flora of Utah* (Albee et al. 1988). Some species from Appendix C could be considered as potentially occurring in the park, but are not included here.

**Appendix C. Rejected (falsely reported or questionable) taxa of Canyonlands National Park.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Comments
Apocynaceae	<i>Apocynum sibiricum</i>	<i>A. cannabinum</i> var. <i>hypericifolium</i>	clasping-leaved dogbane	PerF	Sparse	Ques?	Reported by Schelz et al. (2006), but CANY is well outside the known range of this taxon.
Asclepiadaceae	<i>Asclepias incarnata</i>	Includes reports of <i>A. fascicularis</i>	swamp milkweed	PerF	Wide	Ques?	Reported in Schelz et al. (2006) based on an observation by Boschen in 1984, but CANY is outside the known range of this species.
Boraginaceae	<i>Cryptantha humilis</i>	<i>Oreocarya humilis</i> ssp. <i>nana</i>	dwarf cryptanth	PerF	Wide	FalsRep	Reports from CANY Herbarium based on misidentified specimens of <i>C. osterhoutii</i> .
Boraginaceae	<i>Cryptantha johnstonii</i>		Johnston's cryptanth	PerF	LocEn	FalsRep	Report from CANY Herbarium based on misidentified specimen of <i>C. tenuis</i> . Type locality is Huntington Road, ca 15 mi W of US 50-6, Emery Co., UT (Higgins 1310 BRY). USFWS: 3C
Boraginaceae	<i>Cryptantha paradoxa</i>	<i>Oreocarya paradoxa</i>	Paradox cryptanth	PerF	RegEn	FalsRep	Reports from CANY Herbarium based on misidentified specimens of <i>C. osterhoutii</i> . USFWS Category 3C
Boraginaceae	<i>Heliotropium curassavicum</i> var. <i>obovatum</i>		salt heliotrope	PerF	Wide	FalsRep	Report from Schelz et al. (2006) is based on a specimen collected outside the park.
Cactaceae	<i>Opuntia fragilis</i>		brittle prickly-pear	PerF	Wide	FalsRep	Reports from CANY Herbarium based on misidentified specimens of <i>O. polyacantha</i> var. <i>polyacantha</i> .
Cactaceae	<i>Opuntia littoralis</i> var. <i>martiniana</i>	<i>O. martiniana</i>	littoral pricklypear	PerF	RegEn	Ques?	Reported by Schelz et al. (2006), but CANY is outside the known range of this taxon.
Cactaceae	<i>Opuntia whipplei</i>	<i>Cylindropuntia whipplei</i>	Whipple's cholla	Shrub	RegEn	Ques?	Reported by Schelz et al. (2006), but CANY is outside the known range of this taxon.
Caryophyllaceae (Aisinaceae)	<i>Arenaria congesta</i> var. <i>congesta</i>	<i>Eremogone congesta</i> var. <i>congesta</i> , includes var. <i>cephaloidea</i>	ball-head sandwort	PerF	Wide	FalsRep	Reports from CANY Herbarium based on misidentified specimens of <i>A. fendlerii</i> var. <i>eastwoodiae</i> .
Caryophyllaceae (Aisinaceae)	<i>Arenaria fendleri</i> var. <i>fendleri</i>	<i>Eremogone fendleri</i>	Fendler's sandwort	PerF	Periph	Ques?	Reported by NCPN (in ed.), but CANY is outside the known range of this taxon. Reports probably based on var. <i>eastwoodiae</i> .

Appendix C. Rejected (falsely reported or questionable) taxa of Canyonlands National Park, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Comments
Chenopodiaceae	<i>Atriplex argentea</i> var. <i>argentea</i>		silver orach	AnnF	Wide	FalsRep	Reports from CANY Herbarium based on misidentified specimens of <i>A. rosea</i> .
Chenopodiaceae	<i>Endolepis dioica</i>	<i>Atriplex suckleyi</i>	Suckley's saltbush	AnnF	Wide	FalsRep	Report by Rink based on a misidentified specimen of <i>Atriplex dioica</i> .
Chenopodiaceae	<i>Suaeda occidentalis</i>	Included in <i>S. calceoliformis</i> by some authors	western seepweed	AnnF	Wide	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>S. torreyana</i> var. <i>torreyana</i> .
Compositae (Asteraceae)	<i>Antennaria parvifolia</i>		common pussytoes	PerF	Wide	FalsRep	Report from BYU herbarium is based on a misidentified specimen of <i>A. marginata</i> .
Compositae (Asteraceae)	<i>Aster falcatus</i>	<i>A. falcatus</i> var. <i>falcatus</i> , <i>A. ericoides</i> var. <i>commutatus</i> , <i>Symphotrichum</i> <i>falcatum</i> var. <i>falcatum</i> , <i>Virgulus</i> <i>falcatus</i>	falcate aster	PerF	Sparse	Ques?	Reported by Schelz et al. (2006), but CANY is well outside the known range of this taxon. Reports might be based on <i>A. pansus</i> .
Compositae (Asteraceae)	<i>Bidens comosa</i>	Included in <i>B. tripartita</i> by some authors	straw-stem beggarticks	PerF	Sparse	Ques?	Reported by Schelz et al. (2006), but CANY is well outside the known range of this taxon.
Compositae (Asteraceae)	<i>Bidens tripartita</i>		three-lobed beggarticks	PerF	Periph	FalsRep	Report from Rink 4607 (CANY) is based on a misidentified specimen of <i>B. cernua</i> .
Compositae (Asteraceae)	<i>Chrysopsis zionensis</i>	<i>C. villosa</i> var. <i>foliosa</i> , <i>H. zionensis</i> , <i>H.</i> <i>villosa</i> var. <i>foliosa</i>	Zion golden-aster	PerF	RegEn	Ques?	Reported by Schelz et al. (2006), but CANY is well outside the known range of this taxon. Type locality is W of Leeds along road to Silver Reef Campgrounds, Washington Co., UT (Sample & Heard 7859 NY).
Compositae (Asteraceae)	<i>Chrysothamnus nauseosus</i> var. <i>turbinatus</i>	<i>Ericameria nauseosa</i> var. <i>turbinata</i>	dune rabbitbrush	Shrub	RegEn	Ques?	Reported by NCPN (in ed.) vegetation mapping crew, but CANY is outside the known range of this taxon. Type locality is Canaan Ranch, Kane Co., UT (Jones 6066c POM).
Compositae (Asteraceae)	<i>Cirsium arizonicum</i>	Includes vars. <i>arizonicum</i> & <i>nidulum</i>	Arizona thistle	PerF	Wide	FalsRep	Reports from CANY Herbarium based on misidentified specimens of <i>C. calcaireum</i> var. <i>pulchellum</i> .

Appendix C. Rejected (falsely reported or questionable) taxa of Canyonlands National Park, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Comments
Compositae (Asteraceae)	<i>Cirsium undulatum</i> var. <i>undulatum</i>	<i>C. undulatum</i>	wavy-leaved thistle	PerF	Wide	FalsRep	Reports from CANY Herbarium based on misidentified specimens of <i>C. neomexicanum</i> var. <i>utahense</i> .
Compositae (Asteraceae)	<i>Dicoria canescens</i> ssp. <i>canescens</i>	Vars. not recognized in <i>Flora of North America</i> (2006).	gray sandplant	AnnF	Periph	FalsRep	Reports from CANY Herbarium based on misidentified specimens of <i>D. brandegeei</i> .
Compositae (Asteraceae)	<i>Erigeron argentatus</i>		silver daisy	PerF	Wide	FalsRep	Reports from CANY Herbarium based on misidentified specimens of <i>Chaetopappa ericoides</i> .
Compositae (Asteraceae)	<i>Glyptopleura setulosa</i>		setose crustweed	AnnF	Periph	FalsRep	Reports from CANY Herbarium based on misidentified specimen of <i>G. marginata</i> .
Compositae (Asteraceae)	<i>Grindelia aphanactis</i>	<i>G. nuda</i> var. <i>aphanactis</i> . Included in <i>G. squarrosa</i> in <i>Flora of North America</i> (2006)	Rydberg's gumweed	PerF	Periph	Ques?	Reported by Schelz et al. (2006), but CANY is outside the known range of this taxon.
Compositae (Asteraceae)	<i>Haplopappus acaulis</i> var. <i>acaulis</i>	<i>Stenotus acaulis</i> var. <i>acaulis</i>	stemless goldenweed	PerF	Wide	Ques?	Reported by Schelz et al. (2006), but CANY is well outside the known range of this species. Reports probably based on <i>H. armerioides</i> .
Compositae (Asteraceae)	<i>Haplopappus gracilis</i>	<i>Machaeranthera gracilis</i> , <i>Xanthisma gracile</i>	slender goldenweed	AnnF	Periph	Ques?	Reported by Schelz et al. (2006), but CANY is well outside the known range of this taxon.
Compositae (Asteraceae)	<i>Helianthella uniflora</i>		little sunflower	PerF	Wide	Ques?	Reported by Schelz et al. (2006), but CANY is outside the known range of this taxon.
Compositae (Asteraceae)	<i>Hymenoxys acaulis</i> var. <i>arizonica</i>	<i>Tetraeneuris acaulis</i> var. <i>arizonica</i>	Arizona hymenoxys	PerF	Wide	FalsRep	Reports from CANY Herbarium based on misidentified specimens of <i>H. acaulis</i> var. <i>ivesiana</i> .
Compositae (Asteraceae)	<i>Lygodesmia juncea</i>		rush skeleton-plant	PerF	Periph	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>Stephanomeria exigua</i> .
Compositae (Asteraceae)	<i>Machaeranthera commixta</i>	<i>M. bigelovii</i> var. <i>commixta</i> , <i>Dieteria bigelovii</i> var. <i>commixta</i>	Bigelow's aster	PerF	RegEn	FalsRep	Reports from CANY Herbarium based on misidentified specimens of <i>M. canescens</i> var. <i>aristata</i> . Type locality is Bromide Pass, Henry Mountains, Garfield Co., UT (Jones 5695y US).



Appendix C. Rejected (falsely reported or questionable) taxa of Canyonlands National Park, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Comments
Compositae (Asteraceae)	<i>Platyschukhria integrifolia</i> var. <i>oblongifolia</i>	<i>Bahia nudicaulis</i> var. <i>oblongifolia</i>	San Juan bahia	PerF	RegEn	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>P. integrifolia</i> var. <i>desertorum</i> .
Compositae (Asteraceae)	<i>Viguiera multiflora</i> var. <i>multiflora</i>	<i>Heliomeris multiflora</i> var. <i>multiflora</i>	showy goldeneye	PerF	Wide	Ques?	Reported by Schelz et al. (2006), but CANY is outside the known range of this taxon.
Cruciferae (Brassicaceae)	<i>Alyssum alyssoides</i>		pale madwort	AnnF	Intro	Ques?	Reported by Schelz et al. (2006), but CANY is well outside the known range of this taxon. Native to Europe.
Cruciferae (Brassicaceae)	<i>Arabis hirsuta</i>	Includes vars. <i>glabrata</i> & <i>pycnocarpa</i>	hairy rockcress	PerF	Wide	Ques?	Reported by NCPN (in ed.) vegetation mapping crew, but CANY is outside the known range of this taxon.
Cruciferae (Brassicaceae)	<i>Arabis microphylla</i> var. <i>microphylla</i>	<i>Boechera microphylla</i> var. <i>microphylla</i>	small-leaf rockcress	PerF	Wide	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>A. perennans</i> var. <i>perennans</i> .
Cruciferae (Brassicaceae)	<i>Barbarea vulgaris</i>		European wintercress	PerF	Intro	Ques?	Reported by Schelz et al. (2006), but CANY is well outside the known range of this taxon. Native to Eurasia.
Cruciferae (Brassicaceae)	<i>Descurainia californica</i>		California tansy-mustard	PerF	Wide	Ques?	Reported by Schelz et al. (2006), but CANY is outside the known range of this taxon.
Cruciferae (Brassicaceae)	<i>Lepidium fremontii</i>		Fremont's pepperwort	PerF	Periph	Ques?	Reported in Schelz et al. 2006, but CANY is well out of the expected range of this species.
Cruciferae (Brassicaceae)	<i>Lepidium perfoliatum</i>		clasping pepperwort	AnnF	Intro	FalsRep	Native to Europe. Collection in CANY herbarium is from outside the park.
Cruciferae (Brassicaceae)	<i>Lepidium virginicum</i> var. <i>pubescens</i>		poor-man's pepperwort	AnnF	Wide	FalsRep	Reports from CANY Herbarium based on misidentified specimens of <i>L. latifolium</i> .
Cyperaceae	<i>Carex bella</i>		beautiful sedge	PerG	Wide	FalsRep	Reports from CANY Herbarium based on misidentified specimens of <i>C. specuicola</i> and <i>C. parryana</i> .
Cyperaceae	<i>Carex specuicola</i>		Navajo sedge	PerG	LocEn	FalsRep	Utah specimens previously considered <i>C. specuicola</i> are now thought to be <i>C. parryana</i> according to Sheryl Goodrich (in Welsh et al. 2003). USFWS: Threatened

Appendix C. Rejected (falsely reported or questionable) taxa of Canyonlands National Park, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Comments
Cyperaceae	<i>Carex subfusca</i>		rusty sedge	PerG	Sparse	FalsRep	Reports from CANY Herbarium based on misidentified specimens of <i>C. praegracilis</i> .
Cyperaceae	<i>Scirpus americanus</i>	<i>Scirpus olneyi</i> , <i>Schoenoplectus americanus</i>	American bulrush	PerG	Wide	Ques?	Reported by Loope (1977), but CANY is well outside the known range of this taxon. Report probably based on <i>S. pungens</i> var. <i>longispicatus</i> .
Gentianaceae	<i>Swertia albomarginata</i>	<i>Frasera albomarginata</i>	white-margined swertia	PerF	Wide	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>S. utahensis</i> .
Gramineae (Poaceae)	<i>Aristida arizonica</i>		Arizona three-awn	PerG	Periph	Ques?	Reported by Schelz et al. (2006), but this species is not considered to occur in Utah according to <i>Flora of North America</i> (2003). CANY reports probably based on <i>A. purpurea</i> .
Gramineae (Poaceae)	<i>Bromus carinatus</i>	<i>B. marginatus</i> , <i>B. polyanthus</i> , <i>Ceratichloa carinata</i>	mountain brome	PerG	Wide	FalsRep	Reports from CANY Herbarium based on misidentified specimens of <i>B. japonicus</i> .
Gramineae (Poaceae)	<i>Schedonnardus paniculatus</i>		tumble grass	PerG	Sparse	Ques?	Reported by Schelz et al. (2006), but CANY is outside the known range of this taxon.
Gramineae (Poaceae)	<i>Stipa coronata</i> var. <i>depauperata</i>	<i>Achnatherum parishii</i> ssp. <i>depauperatum</i> , <i>A. coronatum</i>	depauperate needlegrass	PerG	RegEn	Ques?	Reported for CANY by Schelz et al. (2006), but CANY is well outside the known range of this taxon.
Gramineae (Poaceae)	<i>Stipa lettermanii</i>	<i>Achnatherum lettermanii</i>	Letterman's needlegrass	PerG	Wide	Ques?	Reported by Schelz et al. (2006), but CANY is well outside the known range of this taxon.
Gramineae (Poaceae)	<i>Stipa scribneri</i>	<i>Achnatherum scribneri</i>	Scribner needlegrass	PerG	Periph	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>S. coronata</i> var. <i>parishii</i> .
Hydrophyllaceae	<i>Phacelia crenulata</i> var. <i>crenulata</i>		crenulate phacelia	AnnF	Wide	Ques?	Reported for CANY by Schelz et al. (2006), but CANY is well outside the known range of this taxon.
Leguminosae (Fabaceae)	<i>Astragalus missouriensis</i> var. <i>amphibolus</i>		Missouri milkvetch	PerF	RegEn	Ques?	Reported by Schelz et al. (2006), but CANY is outside the known range of this taxon.

Appendix C. Rejected (falsely reported or questionable) taxa of Canyonlands National Park, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Comments
Leguminosae (Fabaceae)	<i>Astragalus pattersonii</i>		Patterson's milkvetch	PerF	RegEn	FalsRep	Reports from the CANY Herbarium are based on misidentified specimens of <i>A. praelongus</i> var. <i>praelongus</i> .
Leguminosae (Fabaceae)	<i>Glycyrrhiza glabra</i>		licorice	PerF	Intro	Ques?	Reported by Schelz et al. (2006), but CANY is well outside the known range of this taxon. Native to Europe.
Leguminosae (Fabaceae)	<i>Lathyrus lanszwertii</i> var. <i>leucanthus</i>	<i>L. leucanthus</i>	whiteflower sweetpea	PerF	RegEn	Ques?	Reported by Schelz et al. (2006), but CANY is outside the known range of this taxon.
Leguminosae (Fabaceae)	<i>Lotus utahensis</i>		Utah trefoil	PerF	RegEn	FalsRep	Report from Schelz et al. 2006 based on specimen from CANY herbarium collected well outside the park. Type locality is W of Carmel, Kane Co., UT (Ferguson & Ottley 5613 NY).
Leguminosae (Fabaceae)	<i>Psoralidium tenuiflorum</i>	<i>Psoralea tenuiflora</i>	slender-flowered scurf-pea	PerF	Wide	Ques?	Reported by Schelz et al. (2006), but CANY is outside the known range of this taxon. Report probably based on <i>P. lanceolatum</i> .
Liliaceae (Alliaceae)	<i>Allium textile</i>		textile onion	PerF	Wide	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>A. macropetalum</i> .
Liliaceae (Melanthiaceae)	<i>Zigadenus elegans</i>	<i>Anticlea elegans</i>	mountain death camas	PerF	Wide	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>Z. vaginatus</i> .
Loasaceae	<i>Mentzelia nitens</i>	<i>M. nitens</i> var. <i>jonesii</i>	curvespod stickleaf	AnnF	Periph	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>M. albicaulis</i> .
Loasaceae	<i>Mentzelia pterosperma</i>	<i>Nuttallia pterosperma</i>	wing-seed stickleaf	PerF	Wide	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>M. marginata</i> .
Loasaceae	<i>Mentzelia pumila</i> var. <i>pumila</i>	<i>M. pumila</i>	Wyoming stickleaf	PerF	RegEn	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>M. marginata</i> .
Marsileaceae	<i>Marsilea vestita</i>	<i>M. vestita</i> var. <i>vestita</i>	pepperwort	Fern	Wide	Ques?	Reported by Schelz et al. (2006), but CANY is outside the known range of this taxon.

Appendix C. Rejected (falsely reported or questionable) taxa of Canyonlands National Park, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Comments
Onagraceae	<i>Comissonia multijuga</i>		manylobe camissonia	AnnF	RegEn	Ques?	Reported by Schelz et al. (2006), but CANY is well outside the known range of this taxon. Type locality is "northern Arizona near Kanab" from Coconino Co., AZ or Kane Co., UT (Thompson s.n. GH).
Onagraceae	<i>Epilobium alpinum</i> var. <i>alpinum</i>	<i>E. anagallidifolium</i>	alpine willow-herb	PerF	Sparse	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>E. ciliatum</i> .
Onagraceae	<i>Oenothera pallida</i> var. <i>trichocalyx</i>		pale evening-primrose	PerF	RegEn	Ques?	Reported by Schelz et al. (2006), but CANY is outside the known range of this taxon.
Orchidaceae	<i>Habenaria sparsiflora</i> var. <i>sparsiflora</i>	<i>Platanthera sparsiflora</i> . Vars. not recognized in <i>Flora of North America</i> (2002)	slender bog orchid	PerF	Wide	FalsRep	Reports from CANY Herbarium based on misidentified specimens of <i>Habenaria zothecina</i> . Varieties not recognized in <i>Flora of North America</i> 2003.
Pinaceae	<i>Pinus monophylla</i>		singleleaf pinyon	Tree	Wide	Ques?	Report from Schelz et al. 2006 needs confirmation as CANY is well beyond the expected range of this species.
Polemoniaceae	<i>Eriastrum diffusum</i>		spreading eriastrum	AnnF	Wide	FalsRep	Report by Moran from CANY is based on a misidentified specimen of <i>Ipomopsis pumila</i> .
Polemoniaceae	<i>Gilia latifolia</i>	<i>G. latifolia</i> var. <i>latifolia</i> , <i>Aliciella latifolia</i>	spiny gilia	AnnF	RegEn	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>G. imperialis</i> .
Polemoniaceae	<i>Ipomopsis congesta</i> var. <i>frutescens</i>	<i>Gilia congesta</i> var. <i>frutescens</i>	shrubby gilia	PerF	RegEn	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>I. pumila</i> . Type locality is Springdale, Washington Co., UT (Jones 5247 NY).
Polemoniaceae	<i>Phlox austromontana</i> var. <i>austromontana</i>	Var. not recognized in Cronquist et al. (1984)	desert phlox	PerF	Wide	FalsRep	Reports from CANY Herbarium based on misidentified specimens of <i>P. hoodii</i> var. <i>canescens</i> .
Polygonaceae	<i>Eriogonum lonchophyllum</i> var. <i>lonchophyllum</i>	<i>E. intermontanum</i> , <i>E. corymbosum</i> var. <i>humivagans</i> . Vars. not recognized in <i>Flora of North America</i> (2005)	longleaf wild buckwheat	Shrub	RegEn	Ques?	Reported by Schelz et al. (2006), but CANY is outside the known range of this taxon.

Appendix C. Rejected (falsely reported or questionable) taxa of Canyonlands National Park, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Comments
Polygonaceae	<i>Eriogonum microthecum</i> var. <i>laxiflorum</i>		slender wild buckwheat	Shrub	Wide	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>E. microthecum</i> var. <i>simpsonii</i> .
Polygonaceae	<i>Eriogonum watsonii</i>	<i>E. deflexum</i> var. <i>watsonii</i>	Watson's wild buckwheat	AnnF	RegEn	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>E. cernuum</i> var. <i>cernuum</i> . <i>E. watsonii</i> is not known from Utah, but is native to Nevada, Idaho, and Oregon.
Polypodiaceae (Adiantaceae)	<i>Pellaea breweri</i>		Brewer's cliff-brake	Fern	Wide	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>Pellaea glabella</i> var. <i>occidentalis</i> .
Rosaceae	<i>Amelanchier alnifolia</i>		Saskatoon serviceberry	Shrub	Wide	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>A. utahensis</i> .
Rosaceae	<i>Potentilla biennis</i>		biennial cinquefoil	AnnF	Wide	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>P. paradoxa</i> .
Rubiaceae	<i>Galium aparine</i> var. <i>echinospermon</i>	<i>G. spurium</i>	cleavers	AnnF	Wide	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>G. multiflorum</i> var. <i>coloradoense</i> .
Salicaceae	<i>Populus x canadensis</i>	Hybrid of <i>P. deltoides</i> x <i>P. nigra</i>	Carolina poplar	Tree	Intro	Ques?	Reported by Schelz et al. (2006), but CANY is outside the known range of this taxon.
Salicaceae	<i>Salix amygdaloides</i>		peach-leaf willow	Tree	Wide	FalsRep	Reports from CANY Herbarium based on misidentified specimens of <i>Salix gooddingii</i> .
Salicaceae	<i>Salix lucida</i> ssp. <i>caudata</i>	<i>S. lasiandra</i> var. <i>caudata</i>	whiplash willow	Shrub	Wide	Ques?	Reported by Schelz et al. (2006), but CANY is outside the known range of this taxon.
Saxifragaceae (Grossulariaceae)	<i>Ribes cereum</i> var. <i>inebrians</i>	<i>R. cereum</i> var. <i>pedicellare</i>	wax currant	Shrub	Wide	FalsRep	Reports from CANY Herbarium based on misidentified specimens of <i>Physocarpus alternans</i> .
Scrophulariaceae	<i>Castilleja miniata</i>		scarlet paintbrush	PerF	Wide	Ques?	Reported by Schelz et al. (2006), but CANY is outside the known range of this taxon.
Scrophulariaceae	<i>Cordylanthus parviflorus</i>		smallflower bird's- beak	AnnF	Wide	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>C. wrightii</i> .

Appendix C. Rejected (falsely reported or questionable) taxa of Canyonlands National Park, cont.

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Comments
Scrophulariaceae	<i>Mimulus guttatus</i>		yellow monkeyflower	PerF	Wide	FalsRep	Reports from CANY Herbarium based on misidentified specimens of <i>M. eastwoodiae</i> .
Scrophulariaceae	<i>Penstemon barbatus</i> var. <i>barbatus</i>	Includes var. <i>torreyi</i>	beardlip penstemon	PerF	Wide	Ques?	Reported by Schelz et al. (2006), but CANY is outside the known range of this taxon.
Scrophulariaceae	<i>Penstemon fremontii</i>	<i>P. fremontii</i> var. <i>fremontii</i>	Fremont's penstemon	PerF	RegEn	Ques?	Reported for CANY by Schelz et al. (2006), but CANY is well outside the known range of this taxon.
Scrophulariaceae	<i>Penstemon strictiformis</i>		Natural Bridges penstemon	PerF	RegEn	FalsRep	Reports from CANY Herbarium are based on specimens collected outside the park.
Scrophulariaceae	<i>Penstemon strictus</i>		Rocky Mountain penstemon	PerF	Wide	Ques?	Reported by Schelz et al. (2006), but CANY is outside the known range of this taxon.
Scrophulariaceae	<i>Penstemon watsonii</i>		Watson's penstemon	PerF	Wide	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>P. strictiformis</i> .
Solanaceae	<i>Datura stramonium</i>		jimson weed	AnnF	Intro	Ques?	Reported by Loope (1977) but CANY is outside the known range of this taxon. Report probably based on <i>D. wrightii</i> . Native to tropical America.
Solanaceae	<i>Physalis virginiana</i>		Virginia ground-cherry	PerF	Wide	Ques?	Reported in Schelz et al. 2006, but no voucher seen in CANY herbarium. Species is not known to occur in Utah (Welsh et al. 2003).
Ulmaceae (Celtidaceae)	<i>Celtis occidentalis</i>		common hackberry	Tree	Intro	FalsRep	Reports from CANY Herbarium are based on misidentified specimens of <i>C. reticulata</i> . Native to E North America.
Umbelliferae (Apiaceae)	<i>Cymopterus beckii</i>		Beck's spring-parsley	PerF	LocEn	FalsRep	Reports from CANY Herbarium based on misidentified specimens of <i>C. terebinthinus</i> var. <i>petraeus</i> . Type locality is Fruita, Capitol Reef NP, Wayne Co., UT (Beck s.n. BRY). USFS Region 4 Sensitive, UT BLM Sensitive, USFWS former C2 candidate.

**Appendix C. Rejected (falsely reported or questionable) taxa of Canyonlands National Park, cont.**

Family	Species name	Synonyms/ Taxonomic notes	Common name	Life form	Range	Park status	Comments
Verbenaceae	<i>Phyla nodiflora</i>		matted fog-fruit	PerF	Intro	Ques?	Reported by Schelz et al. (2006), but CANY is well outside the known range of this taxon. Native to W North America.
Viscaceae	<i>Arceuthobium cyanocarpum</i>	<i>A. campylopodium</i> var. <i>cyanocarpum</i>	limber pine dwarf- mistletoe	PerF	Sparse	Ques?	Reported by Schelz et al. (2006), but CANY is well outside the known range of this taxon. Typically parasitic on <i>Pinus flexilis</i> .

The vascular plant species listed here have been reported for Canyonlands NP from published and unpublished literature (Schelz et al. 2006) or from herbarium specimens, but are now believed to be erroneous because collections were misidentified or made from outside the park (False Reports or FalsRep), or because the park is well outside the known or expected range of the species (Questionable or Ques?).

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<b>Trees</b>											
Aceraceae	<i>Acer grandidentatum</i>	bigtooth maple	Native	Pres	Apr–May						Douglas-fir forest
Aceraceae	<i>Acer negundo</i>	box elder	Native	Pres	Apr–Jun					X	Sandstone bedrock
Betulaceae	<i>Betula occidentalis</i>	water birch	Native	Pres	Apr–May					X	Hanging garden
Betulaceae	<i>Ostrya knowltonii</i>	western hop-hornbeam	Native	Pres	Jul					X	Shady rock crevices
Bignoniaceae	<i>Catalpa bignonioides</i>	common catalpa	Intro	Rep	Jun–Jul						Cultivated
Elaeagnaceae	<i>Elaeagnus angustifolia</i>	Russian-olive	Intro	Pres	May–Jul					X	
Fagaceae	<i>Quercus gambelii</i> var. <i>gambelii</i>	Gambel's oak	Native	Pres	Apr–Jun			X	X	X	
Leguminosae (Fabaceae, Mimosaceae)	<i>Albizia julibrissin</i>	silk-tree	Intro	Pres	Jun–Aug						Disturbed areas
Moraceae	<i>Morus alba</i>	white mulberry	Intro	Rep	Apr–Jun						Cultivated
Pinaceae	<i>Abies concolor</i>	white fir	Native	Pres	NA						Douglas-fir forest
Pinaceae	<i>Pinus edulis</i>	two-needle pinyon	Native	Pres	NA			X	X		
Pinaceae	<i>Pinus ponderosa</i> var. <i>scopulorum</i>	ponderosa pine	Native	Pres	NA						Douglas-fir forest
Pinaceae	<i>Pseudotsuga menziesii</i> var. <i>glauca</i>	Douglas-fir	Native	Pres	NA						Douglas-fir forest
Rosaceae	<i>Prunus persica</i>	peach	Intro	Rep	Apr–May						Cultivated
Salicaceae	<i>Populus alba</i>	white poplar	Intro	Rep	Mar–Jun						Disturbed areas
Salicaceae	<i>Populus fremontii</i> var. <i>fremontii</i>	Fremont cottonwood	Native	Pres	Mar–Jun					X	
Salicaceae	<i>Populus x intercurrents</i>	lance-leaf cottonwood	Native	Pres	Apr–Jun					X	
Salicaceae	<i>Salix gooddingii</i>	Goodding's black willow	Native	Pres	Apr–May					X	
Ulmaceae (Celtidaceae)	<i>Celtis reticulata</i>	netleaf hackberry	Native	Pres	Apr–May		X			X	
Ulmaceae	<i>Ulmus pumila</i>	Siberian elm	Intro	Rep	Mar–Apr			X	X		Disturbed areas



Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<b>Shrubs</b>											
Aceraceae	<i>Acer glabrum</i> var. <i>glabrum</i>	Rocky Mountain maple	Native	Pres	Apr–Jun						Douglas-fir forest
Agavaceae	<i>Yucca angustissima</i>	narrowleaved yucca	Native	Pres	May–Jul	X	X	X	X		
Agavaceae	<i>Yucca baccata</i>	datil yucca	Native	Pres	Apr–Jun			X	X		
Agavaceae	<i>Yucca harrimaniae</i> var. <i>harrimaniae</i>	Harriman's yucca	Native	Pres	Apr–May		X	X	X		
Agavaceae	<i>Yucca toftiae</i>	Toft's yucca	Native	Pres	May–Jul	X	X			X	
Anacardiaceae	<i>Rhus aromatica</i> var. <i>simplicifolia</i>	squawbush	Native	Pres	May–Jul		X	X	X		
Anacardiaceae	<i>Rhus aromatica</i> var. <i>trilobata</i>	squawbush	Native	Pres	May–Jul					X	
Anacardiaceae	<i>Toxicodendron rydbergii</i>	western poison ivy	Native	Pres	May–Jun					X	
Berberidaceae	<i>Berberis fendleri</i>	Fendler's barberry	Native	Pres	May–Jun				X	X	
Berberidaceae	<i>Mahonia fremontii</i>	Fremont's mahonia	Native	Pres	Apr–Jul		X	X	X	X	
Berberidaceae	<i>Mahonia repens</i>	Oregon-grape	Native	Rep	Apr–Jun			X	X	X	
Caprifoliaceae	<i>Symphoricarpos longiflorus</i>	long-flower snowberry	Native	Pres	May–Jul		X	X	X	X	
Celastraceae	<i>Pachystima myrsinites</i>	mountain-lover	Native	Pres	May–Aug						Douglas-fir forest
Chenopodiaceae	<i>Atriplex canescens</i> var. <i>canescens</i>	fourwing saltbush	Native	Pres	May–Sep		X	X	X		
Chenopodiaceae	<i>Atriplex confertifolia</i>	shadscale	Native	Pres	May–Sep	X	X	X	X		
Chenopodiaceae	<i>Atriplex gardneri</i> var. <i>cuneata</i>	Castle Valley saltbush	Native	Pres	May–Sep		X				
Chenopodiaceae	<i>Atriplex garrettii</i> var. <i>garrettii</i>	Garrett's saltbush	Native	Pres	May–Sep		X				
Chenopodiaceae	<i>Grayia spinosa</i>	spiny hopsage	Native	Pres	Apr–Jul	X	X	X	X		
Chenopodiaceae	<i>Krascheninnikovia lanata</i> var. <i>lanata</i>	winterfat	Native	Pres	May–Jul	X	X	X	X		
Chenopodiaceae	<i>Krascheninnikovia lanata</i> var. <i>ruinina</i>	Ruin Park winterfat	Native	Pres	May–Jul			X	X		
Chenopodiaceae (Sarcobataceae)	<i>Sarcobatus vermiculatus</i>	greasewood	Native	Pres	May–Aug		X	X	X	X	

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Shrubs, cont.</i>											
Chenopodiaceae	<i>Zuckia brandegeei</i> var. <i>brandegeei</i>	Brandegee's siltbush	Native	Pres	Jun-Aug		X				
Compositae (Asteraceae)	<i>Artemisia bigelovii</i>	Bigelow's sagebrush	Native	Pres	Aug-Oct			X	X		Rocky areas
Compositae (Asteraceae)	<i>Artemisia filifolia</i>	sand sagebrush	Native	Pres	Aug-Oct		X	X	X		
Compositae (Asteraceae)	<i>Artemisia frigida</i>	fringed sagebrush	Native	Pres	Jul-Sep		X	X	X		
Compositae (Asteraceae)	<i>Artemisia nova</i> var. <i>nova</i>	black sagebrush	Native	Rep	Sep-Oct		X	X	X		
Compositae (Asteraceae)	<i>Artemisia spinescens</i>	budsage	Native	Pres	Apr-Jun		X				
Compositae (Asteraceae)	<i>Artemisia tridentata</i> var. <i>tridentata</i>	basin big sagebrush	Native	Pres	Jul-Sep		X	X	X		
Compositae (Asteraceae)	<i>Baccharis salicina</i>	Rio Grande seepwillow	Native	Pres	May-Nov					X	
Compositae (Asteraceae)	<i>Baccharis viminea</i> var. <i>atwoodii</i>	Atwood's mule-fat	Native	Pres	May-Jun					X	
Compositae (Asteraceae)	<i>Brickellia californica</i>	California brickellbush	Native	Pres	Aug-Sep				X	X	Rock crevices
Compositae (Asteraceae)	<i>Brickellia longifolia</i>	longleaf brickellbush	Native	Pres	Aug-Sep					X	
Compositae (Asteraceae)	<i>Brickellia microphylla</i> var. <i>scabra</i>	rough brickellbush	Native	Pres	Aug-Oct		X	X	X		Slickrock
Compositae (Asteraceae)	<i>Brickellia oblongifolia</i> var. <i>linifolia</i>	Mohave brickellbush	Native	Pres	Jun-Aug		X	X	X		
Compositae (Asteraceae)	<i>Chrysothamnus linifolius</i>	spear-leaf rabbitbrush	Native	Pres	Jul-Sep					X	
Compositae (Asteraceae)	<i>Chrysothamnus nauseosus</i> var. <i>consimilis</i>	greenish rabbitbrush	Native	Pres	Aug-Oct	X		X	X	X	
Compositae (Asteraceae)	<i>Chrysothamnus nauseosus</i> var. <i>gnaphalodes</i>	graystem rabbitbrush	Native	Pres	Aug-Oct		X	X	X		
Compositae (Asteraceae)	<i>Chrysothamnus nauseosus</i> var. <i>graveolens</i>	glabrate rabbitbrush	Native	Pres	Aug-Oct		X	X	X	X	

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Shrubs, cont.</i>											
Compositae (Asteraceae)	<i>Chrysothamnus nauseosus</i> var. <i>junceus</i>	rush rabbitbrush	Native	Pres	Aug-Oct		X	X	X		
Compositae (Asteraceae)	<i>Chrysothamnus nauseosus</i> var. <i>leiospermus</i>	smoothseed rabbitbrush	Native	Pres	Aug-Oct		X	X	X		Slickrock
Compositae (Asteraceae)	<i>Chrysothamnus viscidiflorus</i> var. <i>stenophyllus</i>	slenderleaf rabbitbrush	Native	Pres	Jul-Sep	X	X	X	X		
Compositae (Asteraceae)	<i>Chrysothamnus viscidiflorus</i> var. <i>viscidiflorus</i>	green rabbitbrush	Native	Rep	Jul-Sep		X	X	X		
Compositae (Asteraceae)	<i>Encelia frutescens</i> var. <i>resinosa</i>	bush encelia	Native	Pres	Apr-Jun		X				
Compositae (Asteraceae)	<i>Gutierrezia microcephala</i>	thread snakeweed	Native	Pres	Jul-Oct		X	X	X		
Compositae (Asteraceae)	<i>Gutierrezia sarothrae</i>	broom snakeweed	Native	Pres	Jul-Oct	X		X	X		
Compositae (Asteraceae)	<i>Haplopappus rusbyi</i>	Rusby's goldenbush	Native	Rep	Aug-Sep		X			X	
Compositae (Asteraceae)	<i>Haplopappus scopulorum</i> var. <i>canonis</i>	canyon spindly goldenbush	Native	Pres	Aug-Sep						Douglas-fir forest
Compositae (Asteraceae)	<i>Haplopappus scopulorum</i> var. <i>hirtellus</i>	spindly goldenbush	Native	Pres	Aug-Sep			X	X		
Compositae (Asteraceae)	<i>Oxytenia acerosa</i>	copperweed	Native	Pres	Jun-Oct					X	Hanging gardens
Compositae (Asteraceae)	<i>Pluchea sericea</i>	arrowweed	Native	Pres	May-Jun					X	
Compositae (Asteraceae)	<i>Tetradymia canescens</i>	spineless horsebrush	Native	Rep	Jun-Sep			X			
Compositae (Asteraceae)	<i>Vanceleva stylosa</i>	resinbush	Native	Pres	Jul-Sep		X	X			
Cornaceae	<i>Cornus sericea</i> var. <i>sericea</i>	red-osier dogwood	Native	Pres	May-Jul					X	
Crossosomataceae (Celastraceae)	<i>Glossopetalon spinescens</i> var. <i>meionandrum</i>	spiny greasebush	Native	Pres	Mar-Jun		X	X	X		
Cupressaceae	<i>Juniperus osteosperma</i>	Utah juniper	Native	Pres	NA		X	X	X	X	
Elaeagnaceae	<i>Shepherdia rotundifolia</i>	roundleaf buffaloberry	Native	Pres	Mar-May		X	X	X		

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Shrubs, cont.</i>											
Ephedraceae	<i>Ephedra torreyana</i>	Torrey's ephedra	Native	Pres	NA	X	X		X		
Ephedraceae	<i>Ephedra viridis</i> var. <i>viridis</i>	green ephedra	Native	Pres	NA	X	X		X		
Ephedraceae	<i>Ephedra viridis</i> var. <i>viscida</i>	Cutler's ephedra	Native	Pres	NA	X	X		X		
Fagaceae	<i>Quercus turbinella</i>	turbinella live-oak	Native	Rep	Apr–Jun				X		
Fagaceae	<i>Quercus welshii</i>	shinnery oak	Native	Pres	Apr–Jun		X		X		
Labiatae (Lamiaceae)	<i>Poliomintha incana</i>	purple sage	Native	Pres	May–Jun		X		X		
Leguminosae (Fabaceae)	<i>Psoorhannus thompsoniae</i> var. <i>thompsoniae</i>	Thompson's indigo-bush	Native	Rep	May–Aug		X		X		
Oleaceae	<i>Forestiera pubescens</i>	desert olive	Native	Pres	Apr–May					X	
Oleaceae	<i>Fraxinus anomala</i>	singleleaf ash	Native	Pres	Apr–May		X		X	X	
Polemoniaceae	<i>Leptodactylon pungens</i>	prickly-phlox	Native	Pres	May–Jul		X		X		
Polygonaceae	<i>Eriogonum corymbosum</i> var. <i>corymbosum</i>	crisp-leaf wild buckwheat	Native	Pres	Jul–Oct	X	X		X		
Polygonaceae	<i>Eriogonum corymbosum</i> var. <i>orbiculatum</i>	rimrock wild buckwheat	Native	Pres	Aug–Oct		X		X		Slickrock
Polygonaceae	<i>Eriogonum leptocladon</i> var. <i>leptocladon</i>	sand wild buckwheat	Native	Pres	Jun–Oct		X		X		
Rhamnaceae	<i>Ceanothus greggii</i> var. <i>franklinii</i>	Franklin's desert-lilac	Native	Pres	Apr–May		X		X		
Rhamnaceae	<i>Rhamnus betulifolia</i>	birchleaf buckthorn	Native	Pres	May–Jun					X	Rock crevices
Rosaceae	<i>Amelanchier utahensis</i>	Utah serviceberry	Native	Pres	Apr–Jun	X			X		
Rosaceae	<i>Cercocarpus intricatus</i>	dwarf mountain mahogany	Native	Pres	Apr–Jun		X		X		Slickrock
Rosaceae	<i>Cercocarpus ledifolius</i> var. <i>intermontanus</i>	curl-leaf mountain mahogany	Native	Rep	May–Jun				X		
Rosaceae	<i>Cercocarpus montanus</i>	alder-leaf mountain mahogany	Native	Pres	May–Jun	X			X		
Rosaceae	<i>Coleogyne ramosissima</i>	blackbrush	Native	Pres	Apr–Jun	X	X				
Rosaceae	<i>Fallugia paradoxa</i>	Apache plume	Native	Pres	Apr–Aug		X		X	X	
Rosaceae	<i>Holodiscus dumosus</i>	bush oceanspray	Native	Pres	Jun–Aug						Douglas-fir forest

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Shrubs, cont.</i>											
Rosaceae	<i>Physocarpus alternans</i>	dwarf ninebark	Native	Pres	May–Aug		X		X		Rock crevices
Rosaceae	<i>Prunus virginiana</i> var. <i>melanocarpa</i>	western chokecherry	Native	Pres	May–Jul	X		X			
Rosaceae	<i>Purshia mexicana</i> var. <i>stansburyana</i>	cliff-rose	Native	Pres	May–Jun		X	X	X		
Rosaceae	<i>Rosa woodsii</i>	Woods' rose	Native	Pres	May–Jul					X	
Salicaceae	<i>Salix bebbiana</i>	Bebb's willow	Native	Pres	May–Jun					X	
Salicaceae	<i>Salix eriocephala</i> var. <i>ligulifolia</i>	strapleaf willow	Native	Pres	Apr–Jun					X	
Salicaceae	<i>Salix eriocephala</i> var. <i>watsonii</i>	yellow willow	Native	Pres	Apr–Jun					X	
Salicaceae	<i>Salix exigua</i> var. <i>stenophylla</i>	coyote willow	Native	Pres	Apr–Aug					X	
Saxifragaceae (Hydrangeaceae)	<i>Fendlera rupicola</i>	Fendlerbush	Native	Pres	Apr–Jun	X	X		X		
Saxifragaceae (Hydrangeaceae)	<i>Phialadelphus microphyllus</i>	littleleaf mock-orange	Native	Pres	May–Sep				X		
Saxifragaceae (Grossulariaceae)	<i>Ribes aureum</i>	golden currant	Native	Pres	Mar–Jul		X	X	X	X	
Solanaceae	<i>Lycium andersonii</i>	Anderson's wolfberry	Native	Pres	Feb–May		X	X	X		
Solanaceae	<i>Lycium pallidum</i>	pale wolfberry	Native	Rep	Mar–May		X	X	X		
Solanaceae	<i>Lycium torreyi</i>	Torrey's wolfberry	Native	Pres	Mar–May		X				
Tamaricaceae	<i>Tamarix chinensis</i>	five-stamen tamarisk	Intro	Pres	Apr–Sep					X	
<b>Perennial Forbs</b>											
Aizoaceae	<i>Sesuvium verrucosum</i>	sea purslane	Native	Pres	May–Sep					X	
Apocynaceae	<i>Amsonia jonesii</i>	Jones' amsonia	Native	Rep	Apr–Jun	X	X	X	X		
Apocynaceae	<i>Amsonia tomentosa</i> var. <i>stenophylla</i>	tomentose amsonia	Native	Pres	Apr–May	X	X	X			
Apocynaceae	<i>Apocynum cannabinum</i>	common dogbane	Native	Pres	Jun–Aug					X	
Asclepiadaceae	<i>Asclepias asperula</i> var. <i>asperula</i>	spider milkweed	Native	Pres	May–Jul	X	X	X	X		
Asclepiadaceae	<i>Asclepias labrifloris</i>	Circle Cliffs milkweed	Native	Rep	May–Aug		X	X	X		
Asclepiadaceae	<i>Asclepias latifolia</i>	broadleaf milkweed	Native	Pres	Jun–Aug		X	X	X		

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Perennial / Forbs, cont.</i>											
Asclepiadaceae	<i>Asclepias macroserma</i>	bigseed milkweed	Native	Pres	Apr–Jul	X	X	X	X		
Asclepiadaceae	<i>Asclepias rusbyi</i>	Rusby's milkweed	Native	Pres	Jun–Jul			X	X		
Asclepiadaceae	<i>Asclepias ruthiae</i>	Ruth's milkweed	Native	Pres	Apr–Jun		X	X	X		
Asclepiadaceae	<i>Asclepias speciosa</i>	showy milkweed	Native	Pres	May–Aug					X	
Asclepiadaceae	<i>Asclepias subverticillata</i>	whorled milkweed	Native	Pres	May–Sep		X	X	X		Disturbed areas
Asclepiadaceae	<i>Asclepias tuberosa</i> var. <i>interior</i>	orange milkweed	Native	Pres	May–Aug			X	X		
Asclepiadaceae	<i>Sarcostemma cynanchoides</i> var. <i>hartwegii</i>	climbing milkweed	Native	Pres	Apr–Sep		X			X	
Boraginaceae	<i>Cryptantha bakeri</i>	Baker's cryptanth	Native	Pres	May–Jun			X	X		
Boraginaceae	<i>Cryptantha cinerea</i> var. <i>pustulosa</i>	San Juan cryptanth	Native	Pres	May–Aug		X	X	X		
Boraginaceae	<i>Cryptantha confertiflora</i>	basin yellow cryptanth	Native	Rep	Apr–Jun	X	X	X	X		
Boraginaceae	<i>Cryptantha flava</i>	plateau yellow cryptanth	Native	Pres	Apr–Jun		X	X	X		
Boraginaceae	<i>Cryptantha flavoculata</i>	yellow-eye cryptanth	Native	Pres	Apr–Jun			X	X		
Boraginaceae	<i>Cryptantha fulvocanescens</i>	plateau cryptanth	Native	Pres	May–Jun		X	X	X		
Boraginaceae	<i>Cryptantha osterhoutii</i>	Osterhout's cryptanth	Native	Pres	May–Jun	X	X		X		
Boraginaceae	<i>Cryptantha tenuis</i>	slender cryptanth	Native	Pres	May–Jun		X	X	X		
Boraginaceae	<i>Lithospermum incisum</i>	showy stoneseed	Native	Pres	Apr–Jul	X		X	X		
Boraginaceae (Ehretiaceae)	<i>Tiquilia latior</i>	matted tiquilia	Native	Pres	May–Aug	X	X	X	X		
Cactaceae	<i>Echinocereus engelmannii</i> var. <i>variegatus</i>	Glen Canyon hedgehog cactus	Native	Rep	Mar–Jul		X		X		
Cactaceae	<i>Echinocereus triglochidiatus</i> var. <i>melanacanthus</i>	claretcup	Native	Pres	Apr–Jun		X	X	X		
Cactaceae	<i>Opuntia basilaris</i> var. <i>basilaris</i>	beavertail cactus	Native	Rep	Feb–Jun		X				
Cactaceae	<i>Opuntia erinacea</i> var. <i>utahensis</i>	Utah pricklypear	Native	Pres	May–Jun	X	X	X	X		

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Perennial Forbs, cont.</i>											
Cactaceae	<i>Opuntia phaeacantha</i> var. <i>major</i>	large pricklypear	Native	Pres	Apr-Jul		X		X		
Cactaceae	<i>Opuntia polyacantha</i> var. <i>polyacantha</i>	plains prickly-pear	Native	Pres	May-Jun	X	X	X	X		
Cactaceae	<i>Sclerocactus whipplei</i> var. <i>roseus</i>	small-flower fishhook cactus	Native	Pres	Apr-May		X	X	X		
Caryophyllaceae (Alsinaceae)	<i>Arenaria fendleri</i> var. <i>eastwoodiae</i>	Eastwood's sandwort	Native	Pres	May-Sep	X	X	X	X		
Chenopodiaceae	<i>Bassia americana</i>	greenmolly	Native	Pres	Aug-Oct	X	X				
Compositae (Asteraceae)	<i>Ambrosia tomentosa</i>	skeleton-leaf bursage	Native	Pres	Jun-Oct					X	
Compositae (Asteraceae)	<i>Antennaria marginata</i>	sandstone pussytoes	Native	Pres	May-Jul						Douglas-fir forest
Compositae (Asteraceae)	<i>Arctium minus</i>	burdock	Intro	Pres	Jul-Sep					X	Disturbed areas
Compositae (Asteraceae)	<i>Artemisia campestris</i> var. <i>scouleriana</i>	sand wormwood	Native	Pres	Jul-Sep		X	X	X	X	
Compositae (Asteraceae)	<i>Artemisia dracunculus</i> var. <i>glauca</i>	tarragon	Native	Pres	Jul-Oct		X	X	X	X	
Compositae (Asteraceae)	<i>Artemisia ludoviciana</i> var. <i>albula</i>	Louisiana wormwood	Native	Pres	Jul-Oct			X	X		
Compositae (Asteraceae)	<i>Artemisia ludoviciana</i> var. <i>ludoviciana</i>	Louisiana wormwood	Native	Pres	Jul-Oct			X	X	X	
Compositae (Asteraceae)	<i>Artemisia ludoviciana</i> var. <i>mexicana</i>	Louisiana wormwood	Native	Pres	Jul-Oct				X	X	
Compositae (Asteraceae)	<i>Aster ascendens</i>	Pacific aster	Native	Pres	Jul-Oct			X	X	X	
Compositae (Asteraceae)	<i>Aster glaucodes</i>	blueleaf aster	Native	Pres	Jul-Sep			X	X	X	
Compositae (Asteraceae)	<i>Aster pansus</i>	white heath aster	Native	Pres	Aug-Oct					X	
Compositae (Asteraceae)	<i>Aster spathulatus</i>	western aster	Native	Pres	Jul-Sep					X	
Compositae (Asteraceae)	<i>Aster spinosus</i>	Mexican devilweed	Native	Pres	Mar-Oct					X	

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Perennial/Forbs, cont.</i>											
Compositae (Asteraceae)	<i>Bidens cernua</i>	nodding bur-marigold	Native	Pres	Jul-Sep					X	
Compositae (Asteraceae)	<i>Carduus nutans</i>	musk thistle	Intro	Rep	Jun-Sep			X	X		Disturbed areas
Compositae (Asteraceae)	<i>Centaurea diffusa</i>	diffuse knapweed	Intro	Pres	Jul-Sep						Disturbed areas
Compositae (Asteraceae)	<i>Centaurea repens</i>	Russian knapweed	Intro	Pres	Jun-Sep					X	Disturbed areas
Compositae (Asteraceae)	<i>Chaetopappa ericoides</i>	rose-heath	Native	Pres	May-Sep	X	X	X	X		
Compositae (Asteraceae)	<i>Chrysopsis villosa</i> var. <i>minor</i>	hispid golden-aster	Native	Pres	May-Sep		X	X	X		
Compositae (Asteraceae)	<i>Chrysopsis villosa</i> var. <i>villosa</i>	hairy golden-aster	Native	Rep	May-Sep		X		X		
Compositae (Asteraceae)	<i>Cirsium arvense</i>	Canada thistle	Intro	Rep	Jul-Sep					X	
Compositae (Asteraceae)	<i>Cirsium calcareum</i> var. <i>bipinnatum</i>	wingless thistle	Native	Pres	Jun-Sep					X	
Compositae (Asteraceae)	<i>Cirsium calcareum</i> var. <i>pulchellum</i>	pretty thistle	Native	Pres	Jun-Sep			X	X	X	
Compositae (Asteraceae)	<i>Cirsium neomexicanum</i> var. <i>neomexicanum</i>	New Mexico thistle	Native	Pres	May-Jun		X	X	X		
Compositae (Asteraceae)	<i>Cirsium neomexicanum</i> var. <i>utahense</i>	Utah thistle	Native	Pres	May-Jun		X	X	X		
Compositae (Asteraceae)	<i>Cirsium rothrockii</i>	Rothrock's thistle	Native	Pres	Jun-Aug						
Compositae (Asteraceae)	<i>Cirsium rydbergii</i>	Rydberg's thistle	Native	Pres	May-Aug					X	Hanging gardens
Compositae (Asteraceae)	<i>Cirsium vulgare</i>	bull thistle	Intro	Rep	Jul-Aug			X		X	
Compositae (Asteraceae)	<i>Crepis runcinata</i> var. <i>glauca</i>	glaucous hawksbeard	Native	Pres	May-Aug					X	
Compositae (Asteraceae)	<i>Enceliopsis nudicaulis</i> var. <i>nudicaulis</i>	nakedstem	Native	Pres	May-Jun	X	X	X	X		



Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Perennial Forbs, cont.</i>											
Compositae (Asteraceae)	<i>Erigeron divergens</i> var. <i>divergens</i>	spreading daisy	Native	Pres	May-Sep			X	X	X	
Compositae (Asteraceae)	<i>Erigeron flagellaris</i>	trailing daisy	Native	Pres	May-Aug			X	X		
Compositae (Asteraceae)	<i>Erigeron pumilus</i> var. <i>concinus</i>	Navajo fleabane	Native	Pres	May-Aug		X	X	X		
Compositae (Asteraceae)	<i>Erigeron utahensis</i> var. <i>sparsifolius</i>	slenderleaf daisy	Native	Pres	Jun-Sep		X		X		
Compositae (Asteraceae)	<i>Erigeron utahensis</i> var. <i>utahensis</i>	Utah daisy	Native	Pres	Apr-Jun		X		X		
Compositae (Asteraceae)	<i>Euthamia occidentalis</i>	western goldenrod	Native	Pres	Jul-Oct					X	
Compositae (Asteraceae)	<i>Gaillardia pinnatifida</i>	Hopi blanketflower	Native	Pres	Apr-Aug		X	X	X		
Compositae (Asteraceae)	<i>Gaillardia spathulata</i>	basin blanketflower	Native	Pres	May-Oct		X				
Compositae (Asteraceae)	<i>Grindelia fastigiata</i>	erect gumweed	Native	Pres	Aug-Sep		X	X			
Compositae (Asteraceae)	<i>Grindelia squarrosa</i> var. <i>serrulata</i>	curly-cup gumweed	Native	Pres	Jul-Sep		X	X		X	
Compositae (Asteraceae)	<i>Haplopappus armerioides</i> var. <i>armerioides</i>	thrift goldenweed	Native	Pres	May-Jun		X	X	X		
Compositae (Asteraceae)	<i>Helenium autumnale</i> var. <i>montanum</i>	fall sneezeweed	Native	Pres	Jul-Sep					X	
Compositae (Asteraceae)	<i>Helianthella microcephala</i>	purpledisk sunflower	Native	Pres	Jul-Sep			X	X		
Compositae (Asteraceae)	<i>Hymenopappus filifolius</i> var. <i>cinereus</i>	common hyalineherb	Native	Pres	May-Oct	X	X	X	X		
Compositae (Asteraceae)	<i>Hymenoxys acaulis</i> var. <i>ivesiana</i>	canyonlands hymenoxys	Native	Pres	Apr-Jun			X	X		
Compositae (Asteraceae)	<i>Hymenoxys richardsonii</i> var. <i>floribunda</i>	Colorado rubber-plant	Native	Pres	May-Aug		X	X	X		
Compositae (Asteraceae)	<i>Hymenoxys richardsonii</i> var. <i>richardsonii</i>	Colorado rubber-plant	Native	Pres	May-Aug		X	X	X		

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Perennial/Forbs, cont.</i>											
Compositae (Asteraceae)	<i>Iva axillaris</i>	poverty-weed	Native	Pres	May-Sep		X			X	
Compositae (Asteraceae)	<i>Lactuca tatarica</i> var. <i>pulchella</i>	blue lettuce	Native	Pres	Jun-Sep					X	
Compositae (Asteraceae)	<i>Lygodesmia grandiflora</i> var. <i>grandiflora</i>	showy rush-pink	Native	Pres	May-Jun		X	X	X		
Compositae (Asteraceae)	<i>Machaeranthera canescens</i> var. <i>aristata</i>	aristate aster	Native	Pres	Jul-Oct	X	X	X	X		
Compositae (Asteraceae)	<i>Machaeranthera canescens</i> var. <i>canescens</i>	hoary aster	Native	Rep	May-Sep		X	X	X		
Compositae (Asteraceae)	<i>Machaeranthera grindelioides</i> var. <i>grindelioides</i>	gumweed aster	Native	Pres	May-Jul	X	X	X	X		
Compositae (Asteraceae)	<i>Petrorhiza pumila</i> var. <i>pumila</i>	rock-goldenrod	Native	Pres	Jul-Sep		X	X	X		
Compositae (Asteraceae)	<i>Platyschukria integrifolia</i> var. <i>desertorum</i>	desert bahia	Native	Pres	May-Jun		X		X		
Compositae (Asteraceae)	<i>Ratibida columnifera</i>	prairie coneflower	Native	Pres	Jun-Aug		X	X			Disturbed areas
Compositae (Asteraceae)	<i>Senecio douglasii</i> var. <i>longilobus</i>	Douglas' groundsel	Native	Rep	May-Oct		X	X	X		
Compositae (Asteraceae)	<i>Senecio multilobatus</i>	basin groundsel	Native	Pres	Apr-Aug		X	X	X		
Compositae (Asteraceae)	<i>Senecio spartioides</i> var. <i>multicapitatus</i>	many-headed groundsel	Native	Pres	Jun-Oct		X		X	X	
Compositae (Asteraceae)	<i>Senecio spartioides</i> var. <i>spartioides</i>	broom groundsel	Native	Pres	Jun-Oct		X	X	X		
Compositae (Asteraceae)	<i>Solidago canadensis</i> var. <i>salebrosa</i>	Canadian goldenrod	Native	Pres	Aug-Oct					X	
Compositae (Asteraceae)	<i>Solidago velutina</i>	three-nerve goldenrod	Native	Pres	Aug-Oct			X	X	X	
Compositae (Asteraceae)	<i>Stephanomeria pauciflora</i>	brown-plume wire-lettuce	Native	Pres	May-Oct	X	X	X	X		
Compositae (Asteraceae)	<i>Stephanomeria tenuifolia</i> var. <i>tenuifolia</i>	slender wirelettuce	Native	Pres	Jun-Sep		X		X		

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Perennial Forbs, cont.</i>											
Compositae (Asteraceae)	<i>Taraxacum officinale</i>	common dandelion	Intro	Pres	Apr-Dec					X	
Compositae (Asteraceae)	<i>Thelesperma megapotamicum</i>	Hopi-tea	Native	Pres	Jun-Aug		X				
Compositae (Asteraceae)	<i>Thelesperma subnudum</i> var. <i>subnudum</i>	scapose greenthread	Native	Pres	May-Aug		X		X		
Compositae (Asteraceae)	<i>Thymophylla pentachaeta</i> var. <i>belenidium</i>	scale glandweed	Native	Pres	Aug-Oct		X				
Compositae (Asteraceae)	<i>Townsendia incana</i>	hoary townsendia	Native	Pres	Apr-Jul		X		X		
Compositae (Asteraceae)	<i>Tragopogon dubius</i>	yellow salsify	Intro	Pres	May-Jul			X		X	Disturbed areas
Compositae (Asteraceae)	<i>Xylorhiza glabriuscula</i> var. <i>linearifolia</i>	Moab woodyaster	Native	Pres	Apr-May	X	X				
Compositae (Asteraceae)	<i>Xylorhiza tortifolia</i> var. <i>imberbis</i>	hurtleaf woodyaster	Native	Pres	Apr-Jun	X	X		X		
Compositae (Asteraceae)	<i>Xylorhiza venusta</i>	Cisco woodyaster	Native	Pres	Apr-Jun	X	X				
Convolvulaceae	<i>Convolvulus arvensis</i>	field bindweed	Intro	Pres	Jun-Aug						Disturbed areas
Cruciferae (Brassicaceae)	<i>Arabis holboellii</i> var. <i>pinetorum</i>	Holboell's rockcress	Native	Pres	May-Jul	X		X	X		
Cruciferae (Brassicaceae)	<i>Arabis perennans</i> var. <i>perennans</i>	perennial rockcress	Native	Pres	Mar-Jul		X	X	X		
Cruciferae (Brassicaceae)	<i>Arabis pulchra</i> var. <i>pallens</i>	desert rockcress	Native	Pres	Mar-Jun	X	X	X	X		
Cruciferae (Brassicaceae)	<i>Arabis selbyi</i>	Selby's rockcress	Native	Pres	May-Aug	X		X	X		
Cruciferae (Brassicaceae)	<i>Erysimum asperum</i> var. <i>purshii</i>	sand dune wallflower	Native	Pres	Apr-Aug		X	X	X		
Cruciferae (Brassicaceae)	<i>Lepidium alyssoides</i> var. <i>eastwoodiae</i>	Eastwood's tall pepperwort	Native	Pres	Jul-Oct		X	X	X	X	
Cruciferae (Brassicaceae)	<i>Lepidium latifolium</i>	broad-leaf pepperwort	Intro	Pres	Jun-Oct					X	
Cruciferae (Brassicaceae)	<i>Lepidium montanum</i> var. <i>jonesii</i>	Jones' pepperwort	Native	Pres	Apr-Sep		X	X	X		

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Perennial / Forbs, cont.</i>											
Cruciferae (Brassicaceae)	<i>Physaria acutifolia</i> var. <i>acutifolia</i>	sharp-leaf twinpod	Native	Pres	May-Jul		X	X	X		
Cruciferae (Brassicaceae)	<i>Physaria ludoviciana</i>	silver bladderpod	Native	Rep	May-Jun			X	X		
Cruciferae (Brassicaceae)	<i>Physaria newberryi</i>	Newberry's twinpod	Native	Pres	Mar-Jun		X		X		
Cruciferae (Brassicaceae)	<i>Physaria rectipes</i>	Colorado Plateau bladderpod	Native	Pres	Apr-Aug	X	X	X	X		
Cruciferae (Brassicaceae)	<i>Stanleya pinnata</i>	prince's-plume	Native	Pres	Apr-Sep		X	X	X		
Cruciferae (Brassicaceae)	<i>Streptanthus cordatus</i>	heart-leaf jewelflower	Native	Pres	Apr-Jul		X	X	X		
Cruciferae (Brassicaceae)	<i>Thelypodopsis divaricata</i>	candelabra thelypod	Native	Pres	Apr-Jun		X		X		
Cruciferae (Brassicaceae)	<i>Thelypodium integrifolium</i> var. <i>gracilipes</i>	Moab thelypod	Native	Pres	Jun-Sep					X	
Cucurbitaceae	<i>Cucurbita foetidissima</i>	buffalo gourd	Native	Pres	May-Aug		X	X	X	X	
Euphorbiaceae	<i>Chamaesyce fendleri</i>	Fendler's spurge	Native	Pres	May-Sep	X	X	X	X		
Euphorbiaceae	<i>Euphorbia brachycera</i>	shorthorn spurge	Native	Pres	May-Jun			X	X	X	
Fumariaceae	<i>Corydalis aurea</i> var. <i>occidentalis</i>	golden corydalis	Native	Pres	Apr-Sep			X	X		
Gentianaceae	<i>Gentiana affinis</i> var. <i>affinis</i>	Rocky Mountain gentian	Native	Pres	Jun-Sep					X	
Gentianaceae	<i>Swertia radiata</i>	elkweed	Native	Pres	Jun-Aug			X			
Gentianaceae	<i>Swertia utahensis</i>	Utah swertia	Native	Pres	Jun-Jul	X	X		X		
Labiatae (Lamiaceae)	<i>Dracocephalum parviflorum</i>	smallflower dragonhead	Native	Pres	Jun-Aug			X	X		
Labiatae (Lamiaceae)	<i>Hedeoma drummondii</i>	mock pennyroyal	Native	Pres	May-Aug	X		X	X		
Labiatae (Lamiaceae)	<i>Lycopus americanus</i>	American bugleweed	Native	Pres	Jul-Aug					X	
Labiatae (Lamiaceae)	<i>Marrubium vulgare</i>	common horehound	Intro	Pres	May-Oct			X			Disturbed areas

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Perennial Forbs, cont.</i>											
Leguminosae (Fabaceae)	<i>Astragalus amphioxys</i> var. <i>amphioxys</i>	crescent milkvetch	Native	Pres	Mar–Jun	X	X		X		
Leguminosae (Fabaceae)	<i>Astragalus amphioxys</i> var. <i>vespertinus</i>	Sheldon's milkvetch	Native	Pres	Mar–Jun	X	X	X	X		
Leguminosae (Fabaceae)	<i>Astragalus ceramicus</i> var. <i>ceramicus</i>	painted milkvetch	Native	Pres	Apr–Jun		X	X	X		
Leguminosae (Fabaceae)	<i>Astragalus chamaeleuce</i>	cicada milkvetch	Native	Rep	Apr–Jun		X	X	X		
Leguminosae (Fabaceae)	<i>Astragalus coltonii</i> var. <i>moabensis</i>	Moab milkvetch	Native	Rep	Apr–Jun				X		
Leguminosae (Fabaceae)	<i>Astragalus desperatus</i> var. <i>desperatus</i>	rimrock milkvetch	Native	Pres	May–Jul	X	X	X			Rock crevices
Leguminosae (Fabaceae)	<i>Astragalus episcopus</i>	Bishop's milkvetch	Native	Pres	May–Jun			X	X		
Leguminosae (Fabaceae)	<i>Astragalus flavus</i> var. <i>flavus</i>	yellow milkvetch	Native	Rep	Apr–Jul		X		X		
Leguminosae (Fabaceae)	<i>Astragalus flexuosus</i> var. <i>flexuosus</i>	pliant milkvetch	Native	Rep	May–Aug			X	X		
Leguminosae (Fabaceae)	<i>Astragalus fucatus</i>	Hopi milkvetch	Native	Pres	May–Aug		X	X	X		
Leguminosae (Fabaceae)	<i>Astragalus kentrophyta</i> var. <i>coloradoensis</i>	canyon kentrophyta	Native	Pres	Jun–Sep		X	X			
Leguminosae (Fabaceae)	<i>Astragalus lentiginosus</i> var. <i>palans</i>	straggling milkvetch	Native	Pres	Apr–Jun		X	X		X	
Leguminosae (Fabaceae)	<i>Astragalus lonchocarpus</i>	great rushy milkvetch	Native	Pres	May–Jul		X		X		
Leguminosae (Fabaceae)	<i>Astragalus moencoppensis</i>	Moenkopi milkvetch	Native	Pres	May–Jul	X	X	X	X		
Leguminosae (Fabaceae)	<i>Astragalus mollissimus</i> var. <i>thompsoniae</i>	woolly milkvetch	Native	Pres	Feb–Jun		X	X	X		
Leguminosae (Fabaceae)	<i>Astragalus monumentalis</i>	Monument milkvetch	Native	Pres	May–Jun			X	X		
Leguminosae (Fabaceae)	<i>Astragalus musiniensis</i>	Ferron milkvetch	Native	Pres	Apr–Jun		X	X	X		

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Perennial Forbs, cont.</i>											
Leguminosae (Fabaceae)	<i>Astragalus nidularius</i>	birds-nest milkvetch	Native	Pres	Apr–Jun			X	X		
Leguminosae (Fabaceae)	<i>Astragalus piscator</i>	Fisher milkvetch	Native	Pres	Apr–Jun		X		X		
Leguminosae (Fabaceae)	<i>Astragalus praelongus</i> var. <i>lonchopus</i>	longstipe milkvetch	Native	Rep	Apr–Jul		X	X	X		
Leguminosae (Fabaceae)	<i>Astragalus praelongus</i> var. <i>praelongus</i>	stinking milkvetch	Native	Pres	Apr–Jul		X		X	X	
Leguminosae (Fabaceae)	<i>Astragalus preussii</i> var. <i>latus</i>	Preuss' milkvetch	Native	Pres	Apr–Jun		X	X	X		
Leguminosae (Fabaceae)	<i>Astragalus sesquiflorus</i>	sandstone milkvetch	Native	Pres	May–Aug			X	X		
Leguminosae (Fabaceae)	<i>Dalea flavescens</i> var. <i>flavescens</i>	Kanab prairie-clover	Native	Pres	May–Jul		X	X	X		
Leguminosae (Fabaceae)	<i>Dalea oligophylla</i>	white prairie-clover	Native	Pres	May–Sep		X	X	X	X	
Leguminosae (Fabaceae)	<i>Glycyrrhiza lepidota</i>	Nuttall's licorice	Native	Pres	May–Jul					X	
Leguminosae (Fabaceae)	<i>Hedysarum boreale</i> var. <i>boreale</i>	northern sweetvetch	Native	Pres	May–Aug			X	X	X	
Leguminosae (Fabaceae)	<i>Lathyrus brachycalyx</i> var. <i>zionis</i>	Zion sweetpea	Native	Pres	Apr–Jun			X	X		
Leguminosae (Fabaceae)	<i>Lupinus argenteus</i> var. <i>moabensis</i>	Moab lupine	Native	Pres	May–Aug	X	X	X	X		
Leguminosae (Fabaceae)	<i>Medicago sativa</i>	alfalfa	Intro	Rep	May–Sep						Disturbed areas
Leguminosae (Fabaceae)	<i>Melilotus officinalis</i>	yellow sweet-clover	Intro	Pres	May–Oct						Disturbed areas
Leguminosae (Fabaceae)	<i>Pediemelum megalanthum</i>	large-flowered breadroot	Native	Pres	Apr–Jun		X	X	X		
Leguminosae (Fabaceae)	<i>Peteria thompsoniae</i>	Thompson's peteria	Native	Pres	Apr–Jun		X	X	X		
Leguminosae (Fabaceae)	<i>Psoralidium lanceolatum</i> var. <i>lanceolatum</i>	lemon scurf-pea	Native	Pres	Apr–Aug			X	X		

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Perennial Forbs, cont.</i>											
Leguminosae (Fabaceae)	<i>Psoralidium lanceolatum</i> var. <i>stenophyllum</i>	slenderleaf scurfpea	Native	Pres	Apr–Aug			X			
Leguminosae (Fabaceae)	<i>Sophora nuttalliana</i>	silky sophora	Native	Rep	May–Jun					X	
Leguminosae (Fabaceae)	<i>Sophora stenophylla</i>	silvery sophora	Native	Pres	Jul–Aug		X	X	X		
Liliaceae (Alliaceae)	<i>Allium macropetalum</i>	San Juan onion	Native	Pres	May–Jun	X	X	X	X		
Liliaceae (Alliaceae)	<i>Allium nevadense</i>	Nevada onion	Native	Pres	Apr–Jul	X	X	X	X		
Liliaceae (Alliaceae, Themidaceae)	<i>Androstephium breviflorum</i>	pink funnel-lily	Native	Pres	Apr–May	X	X	X	X		
Liliaceae (Asparagaceae)	<i>Asparagus officinalis</i>	asparagus	Intro	Pres	Jun–Jul					X	
Liliaceae (Calochortaceae)	<i>Calochortus aureus</i>	golden mariposa	Native	Pres	May–Jun		X	X	X		
Liliaceae (Calochortaceae)	<i>Calochortus flexuosus</i>	sinuous mariposa	Native	Pres	Apr–Jun		X	X	X		
Liliaceae (Calochortaceae)	<i>Calochortus nuttallii</i>	sego-lily	Native	Pres	Jun–Jul		X	X	X		
Liliaceae (Anthericaceae)	<i>Eremocrinum albomarginatum</i>	sand lily	Native	Pres	Apr–Jun		X	X			
Liliaceae (Convallariaceae or Ruscaceae)	<i>Smilacina stellata</i>	starry false Solomon's seal	Native	Pres	Apr–Jun			X	X	X	
Liliaceae (Melanthiaceae)	<i>Zigadenus paniculatus</i>	foothills death camas	Native	Rep	Mar–Jun		X	X	X		
Liliaceae (Melanthiaceae)	<i>Zigadenus vaginatus</i>	alcove death camas	Native	Pres	Jul–Aug					X	
Linaceae	<i>Linum perenne</i> ssp. <i>lewisii</i>	blue flax	Native	Pres	Apr–Aug			X	X		
Linaceae	<i>Linum subteres</i>	Utah yellow-flax	Native	Pres	May–Aug		X	X	X		
Loasaceae	<i>Mentzelia marginata</i>	Colorado stickleaf	Native	Pres	Apr–Oct		X	X	X		
Loasaceae	<i>Mentzelia multiflora</i>	desert stickleaf	Native	Pres	Apr–Sep	X	X	X			

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Perennial Forbs, cont.</i>											
Malvaceae	<i>Malvella leprosa</i>	alkali mallow	Native	Pres	May–Nov					X	
Malvaceae	<i>Sphaeralcea coccinea</i>	scarlet globe-mallow	Native	Pres	Apr–Oct	X	X	X	X		
Malvaceae	<i>Sphaeralcea grossularifolia</i>	gooseberry-leaf globemallow	Native	Pres	Mar–Oct		X	X	X		
Malvaceae	<i>Sphaeralcea janeae</i>	Jane's globemallow	Native	Pres	May–Jul	X	X				
Malvaceae	<i>Sphaeralcea leptophylla</i>	slenderleaf globemallow	Native	Pres	May–Sep	X	X	X	X		
Malvaceae	<i>Sphaeralcea moorei</i>	Moore's globemallow	Native	Pres	May–Jul		X		X	X	
Malvaceae	<i>Sphaeralcea parvifolia</i>	small-leaf globemallow	Native	Pres	Mar–Oct	X	X	X	X		
Nyctaginaceae	<i>Abronia fragrans</i>	fragrant sand-verbena	Native	Pres	Apr–Sep	X	X	X	X		
Nyctaginaceae	<i>Allionia incarnata</i>	trailing four-o'clock	Native	Pres	Apr–Sep		X	X			
Nyctaginaceae	<i>Mirabilis linearis</i> var. <i>linearis</i>	narrow-leaf four-o'clock	Native	Pres	May–Aug		X	X	X	X	
Nyctaginaceae	<i>Mirabilis multiflora</i>	showy four-o'clock	Native	Pres	Apr–Jul		X		X		
Onagraceae	<i>Calylophus lavandulifolius</i>	lavender-leaf sundrops	Native	Pres	May–Aug	X	X	X	X		
Onagraceae	<i>Epilobium ciliatum</i>	northern willow-herb	Native	Pres	Jun–Aug					X	
Onagraceae	<i>Oenothera caespitosa</i> var. <i>marginata</i>	long-tube evening-primrose	Native	Pres	Apr–Jun			X	X		
Onagraceae	<i>Oenothera caespitosa</i> var. <i>navajoensis</i>	Paria evening-primrose	Native	Pres	Apr–Jun	X	X	X	X		
Onagraceae	<i>Oenothera longissima</i>	Bridges evening-primrose	Native	Pres	Jul–Sep					X	
Onagraceae	<i>Oenothera pallida</i> var. <i>pallida</i>	pale evening-primrose	Native	Pres	May–Jul	X	X	X	X		
Orchidaceae	<i>Epipactis gigantea</i>	giant helleborine	Native	Pres	Apr–Aug					X	Hanging gardens
Orchidaceae	<i>Habenaria zothecina</i>	alcove bog-orchid	Native	Pres	Jul–Aug					X	Hanging gardens
Orobanchaceae	<i>Orobanche fasciculata</i>	clustered broomrape	Native	Pres	Jun–Jul	X	X	X	X		
Orobanchaceae	<i>Orobanche ludoviciana</i> var. <i>cooperi</i>	Cooper's broomrape	Native	Pres	May–Jul		X	X	X		
Papaveraceae	<i>Argemone corymbosa</i> var. <i>arenicola</i>	San Rafael prickly-poppy	Native	Rep	May–Jul		X				



Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Perennial Forbs, cont.</i>											
Papaveraceae	<i>Argemone corymbosa</i> var. <i>parva</i>	San Rafael prickly-poppy	Native	Pres	May–Jul		X				
Plantaginaceae	<i>Plantago major</i>	common plantain	Intro	Pres	May–Aug		c			X	Disturbed areas
Polemoniaceae	<i>Gilia subnuda</i>	carmine gilia	Native	Pres	May–Jun	X	X	X	X		
Polemoniaceae	<i>Ipomopsis aggregata</i> var. <i>aggregata</i>	scarlet gilia	Native	Pres	May–Aug			X	X		
Polemoniaceae	<i>Ipomopsis longiflora</i>	long-flowered gilia	Native	Pres	May–Aug			X	X		
Polemoniaceae	<i>Ipomopsis roseata</i>	San Rafael gilia	Native	Pres	May–Jun		X	X	X		
Polemoniaceae	<i>Leptodactylon watsonii</i>	Watson's prickly-phlox	Native	Pres	May–Aug	X	X	X	X		Slickrock
Polemoniaceae	<i>Phlox hoodii</i> var. <i>canescens</i>	carpet phlox	Native	Pres	Apr–Jun	X	X	X	X		
Polemoniaceae	<i>Phlox longifolia</i>	long-leaf phlox	Native	Pres	Apr–Jul		X	X	X		
Polygonaceae	<i>Eriogonum alatum</i>	winged wild buckwheat	Native	Pres	Jun–Oct			X	X		
Polygonaceae	<i>Eriogonum bicolor</i>	pretty wild buckwheat	Native	Pres	Apr–Jul	X	X	X	X		
Polygonaceae	<i>Eriogonum inflatum</i> var. <i>inflatum</i>	desert trumpet	Native	Pres	Mar–Oct	X	X		X		
Polygonaceae	<i>Eriogonum microthecum</i> var. <i>simpsonii</i>	slender wild buckwheat	Native	Pres	Jun–Oct		X	X	X		
Polygonaceae	<i>Eriogonum ovalifolium</i>	cushion wild buckwheat	Native	Pres	Apr–Aug		X	X	X		
Polygonaceae	<i>Eriogonum shockleyi</i>	Shockley's wild buckwheat	Native	Pres	May–Aug	X	X	X	X		
Polygonaceae	<i>Eriogonum umbellatum</i> var. <i>subaridum</i>	arid wild buckwheat	Native	Rep	Jun–Oct			X	X		
Polygonaceae	<i>Rumex hymenosepalus</i>	canaigre dock	Native	Pres	Apr–Jun		X	X			
Polygonaceae	<i>Rumex venosus</i>	veiny dock	Native	Rep	Apr–Jun		X	X	X		
Portulacaceae	<i>Talinum brevifolium</i>	sausageleaf talinum	Native	Pres	Jun–Oct				X		Slickrock
Primulaceae	<i>Primula specuicola</i>	cave primrose	Native	Pres	Feb–Jul					X	Hanging gardens
Ranunculaceae (Helleboraceae)	<i>Aquilegia micrantha</i>	alcove columbine	Native	Pres	May–Jun					X	Hanging gardens
Ranunculaceae	<i>Clematis columbiana</i>	Columbian virgin's-bower	Native	Pres	May–Sep			X			
Ranunculaceae	<i>Clematis ligusticifolia</i>	white virgin's-bower	Native	Pres	Jul–Aug					X	

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Perennial Forbs, cont.</i>											
Ranunculaceae (Helleboraceae)	<i>Delphinium andersonii</i> var. <i>scaposum</i>	pale larkspur	Native	Pres	Apr–Jun		X	X	X		
Ranunculaceae (Helleboraceae)	<i>Delphinium nuttallianum</i>	Nuttall's larkspur	Native	Pres	Apr–Jul		X	X	X		
Ranunculaceae	<i>Ranunculus cymbalaria</i>	marsh buttercup	Native	Pres	May–Sep					X	
Rosaceae	<i>Petrophyton caespitosum</i>	rock spiraea	Native	Pres	Aug–Sep			X	X		Rock crevices
Rubiaceae	<i>Galium multiflorum</i> var. <i>coloradoense</i>	Colorado bedstraw	Native	Pres	May–Aug		X	X	X		
Rubiaceae	<i>Galium multiflorum</i> var. <i>multiflorum</i>	shrubby bedstraw	Native	Pres	May–Aug		X	X	X	X	
Santalaceae	<i>Comandra umbellata</i> var. <i>pallida</i>	bastard toadflax	Native	Pres	Apr–Aug		X	X	X		
Scrophulariaceae	<i>Castilleja chromosa</i>	desert paintbrush	Native	Pres	Apr–Jun		X	X	X		
Scrophulariaceae	<i>Castilleja flava</i>	yellow paintbrush	Native	Rep	Jun–Aug			X			
Scrophulariaceae	<i>Castilleja linariifolia</i>	Wyoming paintbrush	Native	Pres	Jul–Aug			X	X	X	
Scrophulariaceae	<i>Castilleja scabrida</i> var. <i>scabrida</i>	Eastwood's paintbrush	Native	Pres	May–Jul	X	X	X	X		
Scrophulariaceae	<i>Mimulus eastwoodiae</i>	Eastwood's monkey-flower	Native	Pres	May–Sep					X	Hanging gardens
Scrophulariaceae	<i>Pedicularis centranthera</i>	dwarf lousewort	Native	Pres	Apr–Jun				X		
Scrophulariaceae	<i>Penstemon comarrhenus</i>	dusty penstemon	Native	Pres	Jun–Aug	X		X	X		
Scrophulariaceae	<i>Penstemon cyanocaulis</i>	bluestem penstemon	Native	Pres	May–Jun		X		X		
Scrophulariaceae	<i>Penstemon eatonii</i> var. <i>undosus</i>	undulate penstemon	Native	Pres	May–Jul		X	X	X		
Scrophulariaceae	<i>Penstemon palmeri</i> var. <i>palmeri</i>	Palmer's penstemon	Native	Pres	May–Aug		X	X	X		
Scrophulariaceae	<i>Penstemon utahensis</i>	Utah penstemon	Native	Pres	Apr–Jun		X	X	X		
Scrophulariaceae	<i>Verbascum thapsus</i>	woolly mullein	Intro	Rep	Jun–Aug			X	X		Disturbed areas
Scrophulariaceae	<i>Veronica anagallis-aquatica</i>	water speedwell	Intro	Pres	Jun–Aug					X	
Solanaceae	<i>Chamaesaracha coronopus</i>	false nightshade	Native	Pres	Apr–Jul		X	X			

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Perennial Forbs, cont.</i>											
Solanaceae	<i>Physalis hederifolia</i> var. <i>fendleri</i>	Fendler's ground-cherry	Native	Pres	May-Oct			X	X		
Solanaceae	<i>Physalis longifolia</i>	long-leaf ground-cherry	Native	Rep	Apr-Aug			X	X	X	
Solanaceae	<i>Solanum jamesii</i>	James' potato	Native	Pres	Jul-Sep			X	X		
Umbelliferae (Apiaceae)	<i>Cymopterus acaulis</i> var. <i>fendleri</i>	Fendler's cymopterus	Native	Pres	Apr-May		X	X	X		
Umbelliferae (Apiaceae)	<i>Cymopterus bulbosus</i>	onion spring-parsley	Native	Rep	Apr-May		X	X	X		
Umbelliferae (Apiaceae)	<i>Cymopterus newberryi</i>	sticky spring-parsley	Native	Pres	Apr-May		X	X	X		
Umbelliferae (Apiaceae)	<i>Cymopterus purpureus</i> var. <i>purpureus</i>	Colorado Plateau spring-parsley	Native	Pres	Apr-Jun		X	X	X		
Umbelliferae (Apiaceae)	<i>Cymopterus terebinthinus</i> var. <i>petraeus</i>	rock spring-parsley	Native	Pres	Apr-May		X	X	X		
Umbelliferae (Apiaceae)	<i>Lomatium parryi</i>	Parry's lomatium	Native	Pres	Apr-Jun		X	X	X		
Verbenaceae	<i>Phyla cuneifolia</i>	wedge-leaf fog-fruit	Native	Pres	May-Jul					X	
Verbenaceae	<i>Verbena bracteata</i>	prostrate vervain	Native	Pres	May-Sep			X	X		
Viscaceae	<i>Arceuthobium divaricatum</i>	pinyon dwarf-mistletoe	Native	Pres	Aug-Sep				X		
Viscaceae	<i>Phoradendron juniperinum</i>	juniper mistletoe	Native	Pres	Jul-Sep				X		
<b>Annual Forbs</b>											
Amaranthaceae	<i>Amaranthus albus</i>	tumble pigweed	Intro	Rep	Jun-Oct						Disturbed areas
Amaranthaceae	<i>Amaranthus blitoides</i>	prostrate pigweed	Native	Pres	Jun-Sep						Disturbed areas
Amaranthaceae	<i>Amaranthus retroflexus</i>	redroot pigweed	Intro	Pres	Jun-Sep						Disturbed areas
Boraginaceae	<i>Cryptantha crassispala</i> var. <i>elachantha</i>	thick-sepaled cryptanth	Native	Pres	Apr-Jun		X	X	X		
Boraginaceae	<i>Cryptantha gracilis</i>	slender cryptanth	Native	Pres	Apr-Jul		X	X	X		
Boraginaceae	<i>Cryptantha kelseyana</i>	Kelsey's cryptanth	Native	Pres	Jun-Jul		X	X	X		
Boraginaceae	<i>Cryptantha pterocarya</i> var. <i>pterocarya</i>	wing-nut cryptanth	Native	Pres	Apr-Jul		X	X	X		
Boraginaceae	<i>Cryptantha recurvata</i>	recurved cryptanth	Native	Pres	Apr-Jun		X	X	X		

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Annual Forbs, cont.</i>											
Boraginaceae	<i>Heliotropium convolvulaceum</i>	bindweed heliotrope	Native	Pres	May-Sep		X	X			
Boraginaceae	<i>Lappula occidentalis</i> var. <i>cupulata</i>	cupseed stickseed	Native	Pres	Apr-Jun		X	X	X	X	
Capparaceae (Cleomeaceae)	<i>Cleome lutea</i>	yellow beeplant	Native	Pres	Apr-Sep		X	X	X		
Capparaceae (Cleomeaceae)	<i>Cleome serrulata</i>	Rocky Mountain beeplant	Native	Pres	May-Oct					X	Disturbed areas
Caryophyllaceae	<i>Silene antirrhina</i>	sleepy catchfly	Native	Pres	May-Aug		X		X	X	
Chenopodiaceae	<i>Atriplex dioica</i>	thickleaf orache	Native	Pres	Jun-Sep					X	
Chenopodiaceae	<i>Atriplex heterosperma</i>	two-seed orache	Intro	Hist	Jun-Sep		X			X	
Chenopodiaceae	<i>Atriplex rosea</i>	tumbling orache	Intro	Pres	Jul-Sep					X	Disturbed areas
Chenopodiaceae	<i>Bassia hyssopifolia</i>	five-horn smotherweed	Intro	Pres	Aug-Oct		X	X		X	Disturbed areas
Chenopodiaceae	<i>Bassia scoparia</i>	summer-cypress	Intro	Pres	Aug-Oct			X	X	X	Disturbed areas
Chenopodiaceae	<i>Chenopodium album</i> var. <i>album</i>	lambsquarter	Intro	Pres	Jun-Sep			X		X	Disturbed areas
Chenopodiaceae	<i>Chenopodium atrovirens</i>	mountain goosefoot	Native	Pres	Jul-Sep			X	X		
Chenopodiaceae	<i>Chenopodium fremontii</i> var. <i>fremontii</i>	Fremont's goosefoot	Native	Pres	Aug-Oct		X	X	X		
Chenopodiaceae	<i>Chenopodium leptophyllum</i>	narrow-leaf goosefoot	Native	Pres	Jul-Sep		X	X	X	X	
Chenopodiaceae	<i>Corispermum americanum</i>	American bugseed	Native	Pres	Aug-Oct			X	X		
Chenopodiaceae	<i>Cycloloma atriplicifolia</i>	winged pigweed	Native	Pres	Aug-Oct		X		X		
Chenopodiaceae	<i>Halogeton glomeratus</i>	halogeton	Intro	Pres	Jul-Aug		X				
Chenopodiaceae	<i>Monolepis nuttalliana</i>	Nuttall's poverty-weed	Native	Pres	Apr-Jul		X	X	X		
Chenopodiaceae	<i>Salsola paulsenii</i>	barbwire Russian thistle	Intro	Pres	Jun-Sep						Disturbed areas
Chenopodiaceae	<i>Salsola tragus</i>	Russian thistle	Intro	Pres	Jun-Sep			X			Disturbed areas
Chenopodiaceae	<i>Suaeda torreyana</i> var. <i>torreyana</i>	Torrey's seepweed	Native	Pres	Jun-Sep		X			X	
Compositae (Asteraceae)	<i>Ambrosia acanthicarpa</i>	bur ragweed	Native	Pres	Jul-Oct		X	X	X	X	
Compositae (Asteraceae)	<i>Aster frondosus</i>	leafy aster	Native	Pres	Aug-Oct					X	

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Annual Forbs, cont.</i>											
Compositae (Asteraceae)	<i>Chaenactis stevioides</i>	stevia dusty-maiden	Native	Pres	Apr-Jul		X	X	X		
Compositae (Asteraceae)	<i>Conyza canadensis</i> var. <i>glabrata</i>	Canadian horseweed	Native	Pres	Jul-Sep					X	
Compositae (Asteraceae)	<i>Dicoria brandegeei</i>	Brandegee's sandplant	Native	Pres	Aug-Oct			X			
Compositae (Asteraceae)	<i>Erigeron bellidiastrum</i>	pretty daisy	Native	Pres	May-Aug		X	X	X		
Compositae (Asteraceae)	<i>Gnaphalium stramineum</i>	cottonbatting cudweed	Native	Pres	Jun-Oct					X	
Compositae (Asteraceae)	<i>Helianthus annuus</i> ssp. <i>lenticularis</i>	common sunflower	Native	Pres	Jun-Sep		X	X	X		
Compositae (Asteraceae)	<i>Helianthus petiolaris</i> ssp. <i>fallax</i>	prairie sunflower	Native	Pres	Jun-Sep		X	X	X		
Compositae (Asteraceae)	<i>Lactuca serriola</i>	prickly lettuce	Intro	Pres	Jul-Sep			X	X		Disturbed areas
Compositae (Asteraceae)	<i>Machaeranthera tanacetifolia</i>	tansyleaf aster	Native	Pres	May-Sep		X	X	X		
Compositae (Asteraceae)	<i>Malacothrix glabrata</i>	filliform desert-dandelion	Native	Pres	Apr-Jul		X		X		
Compositae (Asteraceae)	<i>Malacothrix sonchoides</i>	sowthistle desert-dandelion	Native	Pres	Apr-Jun	X	X	X	X		
Compositae (Asteraceae)	<i>Prenanthes exigua</i>	prenanthes	Native	Pres	May-Jun	X	X		X		
Compositae (Asteraceae)	<i>Sonchus asper</i>	spiny-leaf sow-thistle	Intro	Pres	Jul-Oct					X	
Compositae (Asteraceae)	<i>Stephanomeria exigua</i>	white-plume wire-lettuce	Native	Pres	May-Sep	X	X	X	X		
Compositae (Asteraceae)	<i>Syntrichopappus fremontii</i>	Fremont's syntrichopappus	Native	Pres	Mar-May		X	X	X		
Compositae (Asteraceae)	<i>Townsendia annua</i>	annual townsendia	Native	Pres	Apr-Jun		X	X			
Compositae (Asteraceae)	<i>Verbesina encelioides</i> var. <i>exauriculata</i>	golden crownbeard	Native	Pres	May-Oct			X	X		

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Annual Forbs, cont.</i>											
Compositae (Asteraceae)	<i>Xanthium strumarium</i> var. <i>canadense</i>	rough cocklebur	Native	Pres	Apr–Oct					X	
Cruciferae (Brassicaceae)	<i>Chorispora tenella</i>	blue mustard	Intro	Pres	Apr–Jun			X			Disturbed areas
Cruciferae (Brassicaceae)	<i>Conringia orientalis</i>	hare's-ear mustard	Intro	Rep	Apr–Aug		X	X	X		Disturbed areas
Cruciferae (Brassicaceae)	<i>Descurainia pinnata</i> var. <i>intermedia</i>	western tansy-mustard	Native	Pres	Mar–Aug			X	X		
Cruciferae (Brassicaceae)	<i>Descurainia pinnata</i> var. <i>osmiarum</i>	western tansy-mustard	Native	Pres	Mar–Aug		X	X	X		
Cruciferae (Brassicaceae)	<i>Descurainia sophia</i>	flixweed	Intro	Pres	Mar–Aug		X	X	X		Disturbed areas
Cruciferae (Brassicaceae)	<i>Dithyrea wislizenii</i>	spectacle-pod	Native	Pres	Apr–Sep		X	X	X		
Cruciferae (Brassicaceae)	<i>Draba cuneifolia</i> var. <i>cuneifolia</i>	wedgeleaf draba	Native	Pres	Feb–Jul		X	X	X		
Cruciferae (Brassicaceae)	<i>Lepidium densiflorum</i> var. <i>ramosum</i>	prairie pepperwort	Native	Pres	May–Jul		X	X	X		
Cruciferae (Brassicaceae)	<i>Lepidium lasiocarpum</i> var. <i>georginum</i>	St. George pepperwort	Native	Pres	Mar–Jun		X	X	X		
Cruciferae (Brassicaceae)	<i>Malcolmia africana</i>	African mustard	Intro	Pres	Apr–Jul						Disturbed areas
Cruciferae (Brassicaceae)	<i>Sisymbrium altissimum</i>	tumble mustard	Intro	Pres	May–Aug			X			Disturbed areas
Cruciferae (Brassicaceae)	<i>Streptanthella longirostris</i>	long-beak fiddle-mustard	Native	Pres	Mar–Jun	X	X	X	X		
Euphorbiaceae	<i>Chamaesyce glyptosperma</i>	ridge-seeded spurge	Native	Pres	Jun–Aug		X	X	X		
Euphorbiaceae	<i>Chamaesyce parryi</i>	Parry's spurge	Native	Pres	May–Sep		X	X	X		
Geraniaceae	<i>Erodium cicutarium</i>	stork's-bill	Intro	Pres	Feb–Oct		X	X	X	X	
Hydrophyllaceae	<i>Nama densum</i> var. <i>parviflorum</i>	leafy fiddleleaf	Native	Rep	May–Aug			X	X		
Hydrophyllaceae	<i>Phacelia crenulata</i> var. <i>corrugata</i>	corrugate phacelia	Native	Pres	May–Jun		X	X	X		
Hydrophyllaceae	<i>Phacelia howelliana</i>	Howell's phacelia	Native	Pres	Apr–Jun		X	X	X		

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Annual Forbs, cont.</i>											
Hydrophyllaceae	<i>Phacelia ivesiana</i>	Ives' phacelia	Native	Pres	Apr–Jun		X	X	X		
Leguminosae (Fabaceae)	<i>Astragalus nuttallianus</i> var. <i>micranthiformis</i>	small-flowered milkvetch	Native	Pres	Apr–Jun		X	X	X		
Leguminosae (Fabaceae)	<i>Astragalus sabulorum</i>	gravel milkvetch	Native	Pres	Feb–Jul		X	X	X		
Leguminosae (Fabaceae)	<i>Lupinus brevicaulis</i>	shortstem lupine	Native	Pres	May–Jul		X	X	X		
Leguminosae (Fabaceae)	<i>Lupinus pusillus</i> var. <i>pusillus</i>	dwarf lupine	Native	Pres	Apr–Jul		X	X	X		
Leguminosae (Fabaceae)	<i>Melilotus alba</i>	white sweet-clover	Intro	Pres	May–Oct					X	Disturbed areas
Leguminosae (Fabaceae)	<i>Vicia ludoviciana</i>	Louisiana vetch	Native	Pres	Apr–May		X		X	X	
Linaceae	<i>Linum aristatum</i>	broom-flax	Native	Pres	Apr–Jun	X		X	X		
Linaceae	<i>Linum puberulum</i>	downy flax	Native	Rep	May–Jun		X		X		
Loasaceae	<i>Mentzelia albicaulis</i>	white-stem blazingstar	Native	Pres	Apr–Aug		X	X	X		
Malvaceae	<i>Malva neglecta</i>	common mallow	Intro	Pres	Apr–Oct				X	X	Disturbed areas
Nyctaginaceae	<i>Tripterocalyx carneus</i> var. <i>wootonii</i>	Wooton's sand-verbena	Native	Rep	Apr–Sep		X				
Nyctaginaceae	<i>Tripterocalyx micranthus</i>	small-flower sandpuffs	Native	Pres	Apr–Sep		X	X			
Onagraceae	<i>Camissonia walkeri</i>	Walker's camissonia	Native	Pres	Apr–Jun		X	X	X		
Onagraceae	<i>Gaura parviflora</i>	small-flowered gaura	Native	Pres	May–Aug		X			X	
Onagraceae	<i>Oenothera albicaulis</i>	white-stem evening-primrose	Native	Pres	Mar–Jun		X		X		
Plantaginaceae	<i>Plantago patagonica</i>	woolly plantain	Native	Pres	Mar–Aug	X	X	X	X		
Polemoniaceae	<i>Gilia hutchinsifolia</i>	broadlobe gilia	Native	Pres	Apr–Jul		X	X			
Polemoniaceae	<i>Gilia imperialis</i>	Cataract gilia	Native	Pres	Jun–Sep		X				
Polemoniaceae	<i>Gilia inconspicua</i>	shy gilia	Native	Pres	Apr–Jul		X	X	X		
Polemoniaceae	<i>Gilia leptomeria</i> var. <i>leptomeria</i>	common gilia	Native	Pres	May–Jun		X	X	X		
Polemoniaceae	<i>Ipomopsis gunnisonii</i>	Gunnison's gilia	Native	Pres	May–Jun		X	X	X		
Polemoniaceae	<i>Ipomopsis polycladon</i>	spreading gilia	Native	Pres	Apr–Jun		X	X	X		

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Annual Forbs, cont.</i>											
Polemoniaceae	<i>Ipomopsis pumila</i>	dwarf gilia	Native	Pres	Apr–Jun		X	X	X		
Polygonaceae	<i>Eriogonum cernuum</i> var. <i>cernuum</i>	nodding wild buckwheat	Native	Pres	Apr–Oct		X	X	X		
Polygonaceae	<i>Eriogonum deflexum</i>	skeletonweed wild buckwheat	Native	Rep	Apr–Oct		X		X		
Polygonaceae	<i>Eriogonum gordonii</i>	Gordon's wild buckwheat	Native	Pres	May–Oct		X		X		
Polygonaceae	<i>Eriogonum palmerianum</i>	Palmer's wild buckwheat	Native	Pres	Mar–Oct	X	X	X	X		
Polygonaceae	<i>Eriogonum wetherillii</i>	Wetherill's wild buckwheat	Native	Pres	Apr–Oct	X	X		X		
Polygonaceae	<i>Rumex maritimus</i> var. <i>fuiginus</i>	golden dock	Native	Pres	May–Sep					X	
Portulacaceae	<i>Portulaca oleracea</i>	common purslane	Native	Pres	Jun–Sep			X			Disturbed areas
Ranunculaceae	<i>Ranunculus testiculatus</i>	bur buttercup	Intro	Rep	Mar–Jun		X	X	X		Disturbed areas
Rosaceae	<i>Potentilla paradoxa</i>	bushy cinquefoil	Native	Pres	Jun–Jul					X	
Rosaceae	<i>Potentilla rivalis</i>	brook cinquefoil	Native	Pres	Jun–Aug					X	
Scrophulariaceae	<i>Cordylanthus wrightii</i>	Wright's bird's-beak	Native	Pres	Jul–Sep	X	X	X	X		
Solanaceae	<i>Datura wrightii</i>	angel's trumpet	Native	Pres	Apr–Oct		X	X	X		
Solanaceae	<i>Nicotiana trigonophylla</i>	desert tobacco	Native	Pres	Mar–Oct	X	X				Rock crevices
Solanaceae	<i>Solanum rostratum</i>	buffalobur	Intro	Rep	Jun–Sep						Disturbed areas
Solanaceae	<i>Solanum triflorum</i>	cut-leaf nightshade	Native	Rep	May–Sep		X	X	X		
Zygophyllaceae	<i>Kallstroemia californica</i>	yellow kallstroemia	Native	Pres	Jun–Oct			X	X		
Zygophyllaceae	<i>Tribulus terrestris</i>	puncture vine	Intro	Pres	May–Sep						Disturbed areas
<b>Perennial Graminoids</b>											
Cyperaceae	<i>Carex aurea</i>	golden sedge	Native	Pres	Apr–Aug					X	
Cyperaceae	<i>Carex nebrascensis</i>	Nebraska sedge	Native	Pres	May–Jul					X	
Cyperaceae	<i>Carex parryana</i>	Parry's sedge	Native	Pres	May–Jul					X	
Cyperaceae	<i>Carex pellita</i>	woolly sedge	Native	Pres	May–Sep					X	
Cyperaceae	<i>Carex praegracilis</i>	blackcreeper sedge	Native	Pres	May–Aug					X	
Cyperaceae	<i>Carex rossii</i>	Ross' sedge	Native	Pres	May–Aug			X	X		
Cyperaceae	<i>Eleocharis palustris</i>	common spikerush	Native	Pres	May–Aug					X	



Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Perennial Graminoids, cont.</i>											
Cyperaceae	<i>Eleocharis rostellata</i>	beaked spikerush	Native	Pres	Jun-Aug					X	
Cyperaceae	<i>Scirpus acutus</i>	hardstem bulrush	Native	Pres	Jun-Aug					X	
Cyperaceae	<i>Scirpus pungens</i> var. <i>longispicatus</i>	three-square bulrush	Native	Pres	May-Aug					X	
Cyperaceae	<i>Scirpus validus</i>	soft-stem bulrush	Native	Rep	Jun-Aug					X	
Gramineae (Poaceae)	<i>Agropyron cristatum</i>	crested wheatgrass	Intro	Pres	Jun-Aug		X		X		Disturbed areas
Gramineae (Poaceae)	<i>Agrostis stolonifera</i>	redtop	Intro	Pres	Jun-Sep					X	
Gramineae (Poaceae)	<i>Andropogon gerardii</i> var. <i>chrysocomus</i>	Hall's bluestem	Native	Pres	Jul-Sep			X	X		
Gramineae (Poaceae)	<i>Andropogon gerardii</i> var. <i>gerardii</i>	big bluestem	Native	Pres	Jul-Sep		X		X		
Gramineae (Poaceae)	<i>Andropogon glomeratus</i> var. <i>scabriglumis</i>	bushy bluestem	Native	Rep	Apr-Oct					X	
Gramineae (Poaceae)	<i>Aristida purpurea</i>	purple three-awn	Native	Pres	Mar-Sep	X	X		X		
Gramineae (Poaceae)	<i>Bothriochloa barbinodis</i>	cane bluestem	Native	Pres	Apr-Nov		X		X		
Gramineae (Poaceae)	<i>Bothriochloa laguroides</i> var. <i>torreyana</i>	silver bluestem	Native	Rep	Aug-Sep						Disturbed areas
Gramineae (Poaceae)	<i>Bouteloua curtipendula</i>	sideoats grama	Native	Pres	Jul-Sep		X		X		
Gramineae (Poaceae)	<i>Bouteloua gracilis</i>	blue grama	Native	Pres	Jul-Sep		X		X		
Gramineae (Poaceae)	<i>Bromus inermis</i> var. <i>inermis</i>	smooth brome	Intro	Pres	Jun-Aug					X	
Gramineae (Poaceae)	<i>Calamagrostis scopulorum</i>	Jones' reedgrass	Native	Pres	Jul-Aug					X	
Gramineae (Poaceae)	<i>Distichlis spicata</i>	desert saltgrass	Native	Pres	Jun-Sep	X	X			X	
Gramineae (Poaceae)	<i>Elymus canadensis</i>	Canada wildrye	Native	Pres	Jul-Aug					X	
Gramineae (Poaceae)	<i>Elymus elongatus</i>	tall wheatgrass	Intro	Rep	Jun-Aug		X				Disturbed areas

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Perennial Graminoids, cont.</i>											
Gramineae (Poaceae)	<i>Elymus elymoides</i>	squirreltail	Native	Pres	May–Aug	X	X	X	X	X	
Gramineae (Poaceae)	<i>Elymus hispidus</i>	intermediate wheatgrass	Intro	Rep	Jun–Aug			X	X		Disturbed areas
Gramineae (Poaceae)	<i>Elymus lanceolatus</i>	thickspike wheatgrass	Native	Pres	Jun–Aug			X	X		
Gramineae (Poaceae)	<i>Elymus salinus</i>	Salina wildrye	Native	Pres	Jun–Jul		X	X	X		
Gramineae (Poaceae)	<i>Elymus smithii</i>	western wheatgrass	Native	Pres	Jun–Aug		X	X	X		
Gramineae (Poaceae)	<i>Elymus trachycaulus</i>	slender wheatgrass	Native	Pres	Jun–Aug			X	X	X	
Gramineae (Poaceae)	<i>Elymus virginicus</i>	Virginia wildrye	Native	Pres	Jul–Sep				X		
Gramineae (Poaceae)	<i>Enneapogon desvauxii</i>	spike pappusgrass	Native	Pres	Aug–Sep			X	X		Slickrock
Gramineae (Poaceae)	<i>Erioneuron pilosum</i>	hairy tridens	Native	Pres	May–Jul	X	X	X	X		
Gramineae (Poaceae)	<i>Erioneuron pulchellum</i>	fuffgrass	Native	Pres	Apr–Aug	X	X	X	X		
Gramineae (Poaceae)	<i>Festuca arundinacea</i>	tall fescue	Intro	Pres	May–Jul		X	X			Disturbed areas
Gramineae (Poaceae)	<i>Hilaria jamesii</i>	galleta	Native	Pres	May–Aug	X	X	X	X		
Gramineae (Poaceae)	<i>Hordeum jubatum</i>	foxtail barley	Native	Rep	Jun–Aug		X	X	X	X	
Gramineae (Poaceae)	<i>Muhlenbergia andina</i>	foxtail muhly	Native	Pres	Jul–Sep					X	
Gramineae (Poaceae)	<i>Muhlenbergia asperifolia</i>	scratchgrass	Native	Pres	Jul–Aug					X	
Gramineae (Poaceae)	<i>Muhlenbergia pauciflora</i>	New Mexican muhly	Native	Pres	Aug–Sep		X	X	X		
Gramineae (Poaceae)	<i>Muhlenbergia porteri</i>	bush muhly	Native	Pres	Jul–Sep		X				

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Perennial Graminoids, cont.</i>											
Gramineae (Poaceae)	<i>Muhlenbergia pungens</i>	Sandhill muhly	Native	Pres	Jul-Sep	X		X	X		
Gramineae (Poaceae)	<i>Muhlenbergia thurberi</i>	Thurber's muhly	Native	Pres	Jul-Sep			X	X	X	
Gramineae (Poaceae)	<i>Oryzopsis micrantha</i>	littleseed ricegrass	Native	Pres	Jun-Aug			X	X		
Gramineae (Poaceae)	<i>Panicum acuminatum</i>	bundle panicgrass	Native	Pres	Jul-Sep					X	Hanging gardens
Gramineae (Poaceae)	<i>Panicum obtusum</i>	vine mesquite	Native	Pres	Aug-Sep					X	
Gramineae (Poaceae)	<i>Panicum virgatum</i>	switchgrass	Native	Pres	Jun-Sep				X	X	
Gramineae (Poaceae)	<i>Phleum pratense</i>	timothy	Intro	Rep	Jun-Sep			X	X	X	
Gramineae (Poaceae)	<i>Phragmites australis</i>	common reed	Native	Pres	Jul-Sep					X	
Gramineae (Poaceae)	<i>Poa bulbosa</i>	bulbous bluegrass	Intro	Rep	Apr-Jul			X	X		
Gramineae (Poaceae)	<i>Poa fendleriana</i>	muttongrass	Native	Pres	May-Aug		X	X	X		
Gramineae (Poaceae)	<i>Poa secunda</i>	Sandberg's bluegrass	Native	Pres	Apr-Sep		X	X	X		
Gramineae (Poaceae)	<i>Polypogon semiverticillatus</i>	water polypogon	Intro	Pres	Jul-Aug					X	
Gramineae (Poaceae)	<i>Puccinellia nuttalliana</i>	Nuttall's alkaligrass	Native	Pres	May-Aug		X	X		X	
Gramineae (Poaceae)	<i>Schizachyrium scoparium</i>	little bluestem	Native	Pres	Jul-Sep			X	X	X	
Gramineae (Poaceae)	<i>Sorghum halepense</i>	Johnson-grass	Intro	Pres	Jul-Sep			X		X	
Gramineae (Poaceae)	<i>Spartina gracilis</i>	alkali cordgrass	Native	Pres	Jun-Sep					X	
Gramineae (Poaceae)	<i>Spartina pectinata</i>	prairie cordgrass	Native	Rep	Jun-Sep					X	

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Perennial Graminoids, cont.</i>											
Gramineae (Poaceae)	<i>Sporobolus airoides</i> var. <i>airoides</i>	alkali sacaton	Native	Pres	Jun-Aug		X	X	X	X	
Gramineae (Poaceae)	<i>Sporobolus contractus</i>	spike dropseed	Native	Pres	Jun-Sep			X	X		
Gramineae (Poaceae)	<i>Sporobolus cryptandrus</i>	sand dropseed	Native	Pres	Jun-Aug			X	X		
Gramineae (Poaceae)	<i>Sporobolus flexuosus</i>	mesa dropseed	Native	Pres	Jun-Sep		X	X	X		
Gramineae (Poaceae)	<i>Sporobolus giganteus</i>	giant dropseed	Native	Pres	Jun-Sep			X			
Gramineae (Poaceae)	<i>Stipa arida</i>	Mormon needlegrass	Native	Pres	May-Jul		X	X	X		
Gramineae (Poaceae)	<i>Stipa comata</i> var. <i>comata</i>	needle-and-thread	Native	Pres	May-Jul		X	X	X		
Gramineae (Poaceae)	<i>Stipa coronata</i> var. <i>parishii</i>	crested needlegrass	Native	Pres	Jun-Jul		X	X	X		
Gramineae (Poaceae)	<i>Stipa hymenoides</i>	Indian ricegrass	Native	Pres	May-Jul	X	X	X	X		
Gramineae (Poaceae)	<i>Stipa neomexicana</i>	New Mexico feathergrass	Native	Pres	Jun-Jul	X	X	X	X		
Gramineae (Poaceae)	<i>Stipa speciosa</i>	desert needlegrass	Native	Pres	Apr-Jun		X	X	X		
Gramineae (Poaceae)	<i>Stipa x bloomeri</i>	Bloomer's ricegrass	Native	Pres	Jun-Aug		X	X	X		
Gramineae (Poaceae)	<i>Tridens muticus</i>	slim tridens	Native	Pres	May-Sep		X	X	X		
Juncaceae	<i>Juncus arcticus</i>	Baltic rush	Native	Pres	May-Jul					X	
Juncaceae	<i>Juncus ensifolius</i> var. <i>brunnescens</i>	Tracy's rush	Native	Pres	Jun-Aug					X	
Juncaceae	<i>Juncus ensifolius</i> var. <i>montanus</i>	mountain rush	Native	Pres	Jun-Aug					X	
Juncaceae	<i>Juncus longistylis</i>	longstyle rush	Native	Pres	Jun-Aug					X	
Juncaceae	<i>Juncus nodosus</i>	knotted rush	Native	Pres	Jul-Sep					X	
Juncaceae	<i>Juncus tenuis</i>	poverty rush	Native	Rep	Jun-Aug					X	

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Perennial Graminoids, cont.</i>											
Juncaceae	<i>Juncus torreyi</i>	Torrey's rush	Native	Pres	Jun-Aug					X	
Typhaceae	<i>Typha domingensis</i>	southern cattail	Native	Pres	Jul-Aug					X	
Typhaceae	<i>Typha latifolia</i>	broad-leaved cattail	Native	Pres	Jun-Aug					X	
<b>Annual Graminoids</b>											
Cyperaceae	<i>Cyperus acuminatus</i>	taper-tip flat-sedge	Native	Pres	Jul-Oct					X	
Cyperaceae	<i>Cyperus erythrorhizos</i>	redroot flat-sedge	Native	Pres	Jun-Sep					X	
Gramineae (Poaceae)	<i>Avena fatua</i> var. <i>sativa</i>	oats	Intro	Pres	Jun-Aug						Disturbed areas
Gramineae (Poaceae)	<i>Bouteloua barbata</i>	sixweeks grama	Native	Pres	Aug-Sep		X	X		X	
Gramineae (Poaceae)	<i>Bromus diandrus</i>	ripgut brome	Intro	Pres	Mar-Jun		X				Disturbed areas
Gramineae (Poaceae)	<i>Bromus japonicus</i>	Japanese chess	Intro	Pres	Jun-Aug		X	X	X	X	
Gramineae (Poaceae)	<i>Bromus rubens</i>	red brome	Intro	Pres	Mar-Jun	X	X				
Gramineae (Poaceae)	<i>Bromus tectorum</i>	cheatgrass	Intro	Pres	May-Jul	X	X	X	X		
Gramineae (Poaceae)	<i>Echinochloa crus-gallii</i>	barnyard-grass	Intro	Pres	Aug-Sep					X	
Gramineae (Poaceae)	<i>Eremopyrum triticeum</i>	annual wheatgrass	Intro	Pres	May-Jul		X	X	X		
Gramineae (Poaceae)	<i>Festuca octoflora</i>	six-weeks fescue	Native	Pres	Apr-Jun	X	X	X	X		
Gramineae (Poaceae)	<i>Hordeum murinum</i>	rabbit barley	Intro	Pres	May-Jul			X			
Gramineae (Poaceae)	<i>Hordeum pusillum</i>	little barley	Native	Pres	May-Aug		X	X	X		
Gramineae (Poaceae)	<i>Leptochloa fascicularis</i>	bearded sprangletop	Native	Pres	Jul-Sep					X	
Gramineae (Poaceae)	<i>Munroa squarrosa</i>	false buffalograss	Native	Pres	Jun-Sep	X	X	X	X		
Gramineae (Poaceae)	<i>Panicum capillare</i>	witchgrass	Native	Pres	Jun-Sep		X	X		X	

Appendix D. Confirmed, historical, and reported taxa of Canyonlands National Park, organized by life form with ecological notes, cont.

Family	Species name	Common name	Nativity	Park status	Flower time	Blk-Br	Salt Des	SgeGrs	Pin-Jun	Wet	Comments
<i>Annual Graminoids, cont.</i>											
Gramineae (Poaceae)	<i>Poa bigelovii</i>	Bigelow's bluegrass	Native	Rep	Mar-May		X	X	X		
Gramineae (Poaceae)	<i>Polygonum monspeliensis</i>	rabbitfoot-grass	Intro	Pres	Jun-Aug					X	
<b>Ferns and Allies</b>											
Equisetaceae	<i>Equisetum arvense</i>	field horsetail	Native	Pres	NA			X	X	X	
Equisetaceae	<i>Equisetum hyemale</i> var. <i>affine</i>	tall scouring-rush	Native	Pres	NA					X	
Equisetaceae	<i>Equisetum laevigatum</i>	smooth scouring-rush	Native	Pres	NA					X	
Polypodiaceae (Adiantaceae)	<i>Adiantum capillus-veneris</i>	southern maidenhair fern	Native	Pres	NA					X	
Polypodiaceae (Aspleniaceae)	<i>Asplenium resiliens</i>	ebony spleenwort	Native	Pres	NA						Shady rock crevices
Polypodiaceae (Adiantaceae)	<i>Cheilanthes feei</i>	slender lip-fern	Native	Pres	NA			X	X		Rock crevices
Polypodiaceae (Adiantaceae)	<i>Pellaea glabella</i> var. <i>occidentalis</i>	western cliffbrake	Native	Pres	NA						Sandstone cliffs
Polypodiaceae (Adiantaceae)	<i>Pellaea limitanea</i>	border cloak-fern	Native	Pres	NA					X	Hanging gardens

The Department of the Interior protects and manages the nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its special responsibilities to American Indians, Alaska Natives, and affiliated Island Communities.

NPS 100066, June 2009

**National Park Service**  
**U.S. Department of the Interior**



---

**Natural Resource Program Center**  
1201 Oak Ridge Drive, Suite 150  
Fort Collins, Colorado 80525

[www.nature.nps.gov](http://www.nature.nps.gov)